

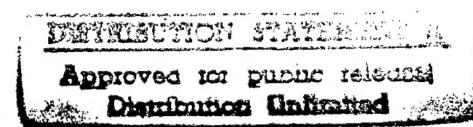
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10 DECEMBER 1986

China Report

AGRICULTURE



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JPRS-CAG-86-040

10 DECEMBER 1986

CHINA REPORT
AGRICULTURE

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

NATIONAL

Ecologist on Rational Development, Resources (XINHUA, 5 Nov 86)	1
PRC Trying To Halt Southward Advance of Desert (Bernard Degioanni; AFP, 3 Nov 86)	2
Problems in Veterinary Medicine Discussed (Zhang Jianping, Wang Jingbao; NONGMIN RIBAO, 1 Apr 86)	4
XINHUA Cites RENMIN RIBAO on Agriculture (XINHUA, 3 Nov 86)	6
Agriculture Seen in Fundamental Position (Editorial; NONGCUN GONGZUO TONGZUN, No 8, 5 Aug 86)	7
Paper Urges Improvement in Rural Drinking Water (XINHUA, 4 Nov 86)	11
Future Cropping Patterns Analyzed (Li Yuanzhu; NONGYE JISHU JINGJI, No 6, Jun 86)	12
Reform of Rural Credit Cooperatives (Lu Lianxiang; NONGYE JINGJI WENTI, No 8, Aug 86)	18
Ice Run Disaster on Huang He Controlled (XINHUA, 29 Oct 86)	24
Soil Erosion Combated in Huangtu Plateau (XINHUA, 31 Oct 86)	25

Specialists Cited on Control of Urban Floods (XINHUA, 5 Nov 86)	26
GUANGMING RIBAO Notes Shortage of Agrotechnicians (XINHUA, 26 Oct 86)	28
WFP Developing Fish Farms in Rural Areas (Liu Dizhong; CHINA DAILY, 4 Nov 86)	29
Contract Farming Frees Labor for Factories (XINHUA, 8 Nov 86)	31
Briefs	
Diversified Tree Growth Methods	33
Forestry Products Produced	33
Cotton Growing Centers Planned	33
Fishing Grounds Monitored	33
More Vegetable, Fruit Acreage	34
Demand for Fertilizer	34
Guard Against Forest Fires	34
Plans To Improve Low-Yield Land	34
Scientists Warn of Ecological Disaster	35
Improvements in Eroded Areas	35
Forestry Development	36

TRANSPROVINCIAL AFFAIRS

Geographic Shift in Grain Output Aids Readjustment (Du Chunyong, et al.; NONGCUN GONGZUO TONGZUN, No 8, 5 Aug 86)	37
JINGJI RIBAO on Development of Arid Northwest (XINHUA, 25 Oct 86)	40

GANSU

Readjustment of Agricultural Output Advocated (Jia Zhijie; NONGMIN RIBAO, 9 Apr 86)	41
Briefs	
Summer Harvest	44

GUANGDONG

Guangdong Holds Water Conservation Conference (Guangdong Provincial Service, 25 Sep 86)	45
Briefs	
Work Groups To Drought-Hit Areas	46

GUIZHOU

PRC Studies Water Loss From Karst Formations
(XINHUA, 8 Nov 86) 47

Briefs

Good Results in Assisting Poor 48

HEILONGJIANG

Large Farming Center Built in Heilongjiang
(XINHUA, 22 Oct 86) 49

Briefs

Specialized Households Decline 50

Vegetable Harvest 50

Policy Promotes Cattle Raising 50

HUBEI

Briefs

Emergency Measures To Prevent Fire 51

JIANGSU

Circular on Drought Issued by Province
(Jiangsu Provincial Service, 23 Oct 86) 52

LIAONING

Farmers in Northeast Plant More Fruit Trees
(XINHUA, 7 Nov 86) 53

NEI MONGGOL

Household Pastureland Said Flourishing
(XINHUA, 7 Nov 86) 55

Briefs

Wool Procurement 57

QINGHAI

Briefs

Water Conservancy Expenditures 58
Cattle, Sheep Procurement 58

SHAANXI

Rural Advancement in Science, Technology Planned
(Shaanxi Provincial Service, 4 Oct 86) 59

Briefs		
Bumper Cotton Harvest		61
SHANGHAI		
Briefs		
Funds To Aid Grain Production		62
SHANXI		
Agricultural Development Strategy Formulated (Shanxi Provincial Service, 19 Oct 86)	.....	63
Water Conservancy Conference (Shanxi Provincial Service, 16 Oct 86)	.....	64
SICHUAN		
Plastic-Cover Rice Seedling Cultivation Described, Praised (Li Yujia; NONGMIN RIBAO, 7 Apr 86)	.....	65
Briefs		
Agricultural Societies Thrive		67
TIANJIN		
Briefs		
Grain Output		68
XINJIANG		
Briefs		
Goods Distributed Throughout PRC		69
Market Thrives		69
XIZANG		
Grape-Growing Introduced to Xizang Region (XINHUA, 21 Oct 86)	.....	70
ZHEJIANG		
Specialized Peasants Boost Contract Farming (XINHUA, 18 Oct 86)	.....	72
Briefs		
High-Quality Water Discovered		74

/9987

NATIONAL

ECOLOGIST ON RATIONAL DEVELOPMENT, RESOURCES

OW050836 Beijing XINHUA in English 0757 GMT 5 Nov 86

[Text] Beijing, 5 November (XINHUA)--A noted Chinese ecologist called for the rational development and use of natural resources by viewing the situation in terms of both the environment and the economy.

Ma Shijun, member of the World Environment and Development Committee, was quoted by today's PEOPLE'S DAILY as saying, "China, like many countries, is faced with problems of natural resources, environment and economy." "If we cannot properly solve these problems, we will have economic recession," he noted.

"In viewing the whole situation," the ecologist, who is not in his seventies said, "one should understand the inter-relation of all integral parts. The economy cannot steadily develop without the dependable supply of natural resources."

"China has undergone great economic changes since 1979, when it began nationwide economic reform," Ma said. "But many people still follow traditional ways by putting undue emphasis on production and output value and paying attention only to local and present benefits, while neglecting the overall and long-term interests of the people."

According to a statistical report, 11.4 percent of China's territory is desert and sandy wasteland, and 46.6 million hectares of grasslands have been lost because of vegetation destruction.

Reforestation has not yet caught up with logging in China, according to the ecologist, and a total of 2.1 million hectares of forest areas are destroyed each year.

The overuse of chemical fertilizers and improper irrigation have caused soil quality to decrease, and a great deal of farmland is polluted by raw industrial waste water being discharged into rivers and lakes.

The ecologist urged people to view the whole situation and to make comprehensive use and development of the natural resources in order to benefit future generations.

/12913
CSO: 4020/43

NATIONAL

PRC TRYING TO HALT SOUTHWARD ADVANCE OF DESERT

HK030402 Hong Kong AFP in English 0340 GMT 3 Nov 86

[By Bernard Degioanni]

[Text] Jiayuguan, China, 3 November, (AFP)--Chinese scientists are struggling to halt the advance of the shifting sands whose steady march threatens to turn vast stretches of north China into a barren wasteland.

The Chinese press has voiced concern about the expanding deserts, blaming the problem in part on policies carried out during the Cultural Revolution (1966-1976) and warned that if measures are not taken Beijing will be completely covered by sand in 200 years.

Scientists at the forefront of attempts to combat the problem in north China, where a sixth of the land is desert, echo these sentiments, and still see desertification as a major problem despite the 1978 launch of the first serious campaign against the spreading sands.

"Since that date, the sand continues to advance by 7 metres (23 feet) a year against 20 metres (66 feet) in 1949," said Di Xingmin, director of a research centre in the Gansu provincial capital of Lanzhou studying ways to control desertification.

Today some 11 percent of China's total area of about 9,560,000 square kilometres (3,824,400 square miles) is under desert.

The largest stretches are the sands of the Taklamakan Desert, covering some 327,500 square kilometres (131,000 square miles) to the north of the Tibetan mountain ranges, and the vast Gobi Desert which covers 1,036,000 square kilometres (414,400 square-miles) in north China and Mongolia.

One expert based near this dusty town where the Great Wall starts its meandering course across north China said the desert simply skirts such obstacles in its determined push toward new frontiers.

"Here we are on the Silk Road, which Marco Polo followed some 600 years ago," the expert said proudly, and ancient towers and walls are testimony that people once lived in the hostile desert near here.

"Nothing can really have changed," he added. Occasional tufts of dry grass and skeletal shrubs mark the boundary, for now, of the vast stretches of sand which shift ceaselessly in the gusting wind.

In Gansu's Jiuquan Prefecture, which encompasses Jiayuguan and 94 villages, 95 percent of the surface area--a million hectares (2.47 million acres)--is covered by desert of mountains.

The remaining 5 percent consists of oases, which for the most part suffer a shortage of water.

Some 35 million people live in northwest China, the people Mr Di says are the key to solving or controlling the problem. "The people are the indispensable support of every campaign, of every effort to end desertification," he said.

"When people lived in small tribes, the natural environment was spared," he said. But with Mao Zedong's encouragement of an accelerated birth rate in the 1950's, population density soared, causing social problems and helping the desert.

"Since then, desertification has accelerated with destructive clearing and the anarchic exploitation of the subsoil," an expert at Lanzhou said.

Blaming the Cultural Revolution for the problem, the Chinese press last year lamented that even trees planted to arrest the sand's march were regarded as a product of "revisionism" and largely destroyed.

Today China has embarked on an ambitious programme, with research stations in Gansu and Inner Mongolia studying sand movements, the development of agriculture in desert areas, and chemical solutions to the problems.

"To control the advance of the desert is now possible. But to eliminate it is impossible. At best it would take at least a century to achieve," said Tun Lizhong, an engineer at the Lanzhou Centre.

Methods used by the researchers including planting plots of dead vegetation over large areas of sand to prevent it from moving. "But even if it's not too expensive, this method requires a lot of manpower," an expert here said.

The sand has also been covered with gravel and tar to stop it shifting, but these two methods are too costly, the expert said.

Since March 1982 peasants in China's northern desert areas have been prohibited from chopping down trees to feed their stoves, and those who break the law are liable to a fine. "It's a deterrent in a region where people are poor," an expert said.

"But the situation is not simple. With sand storms blowing at least 80 days a year, it's sometimes hard to have faith in the projects you embark on," an official at Lanzhou said.

/12232
CSO: 4020/39

NATIONAL

PROBLEMS IN VETERINARY MEDICINE DISCUSSED

Beijing NONGMIN RIBAO in Chinese 1 Apr 86 p 2

[Article by Zhang Jianping [1728 1696 1627] and Wang Jingbao [3769 0079 1405]: "Pressing Problems in China's Veterinary Medicine"]

[Text] These reporters recently learned from the work conference convened by the Ministry of Agriculture, Animal Husbandry and Fishery to implement the Regulations Governing Livestock and Poultry Disease Prevention that, even though China's veterinary medical work has registered considerable progress in the last few years, the new political and economic environment has created new problems in disease prevention and treatment and that it is urgent that we increase our understanding of and resolve these problems.

Prevention work has not been fully carried out for many years, and thus we have failed to eradicate a number of livestock and poultry diseases. Some regions, moreover, have misinterpreted reforms and the responsibility system and taken the policy to eliminate "eating out of the same big pot" to mean lone-rangerism, which proclivities have resulted in full or partial paralysis or even dismantling of veterinary stations in some towns and townships. In some provinces the number of paralyzed or semi-paralyzed basic-level veterinary stations has reached 20 to 30 percent of the total, and in a few provinces the ratio has reached over one-half. These stations used to be collective in nature, and the work and livelihood of their employees depended on remuneration for the services rendered. But some regions misinterpreted the central government's policy to reduce peasant burdens and canceled contracts for remunerated technical services, which move dealt a big blow to the stations. Institutional instability and instability and anxiety among employees have made veterinary work difficult to carry out and led to a reduction in inoculation frequency. And disease prevention and quarantine agencies, personnel and testing procedures lack the quality required for commercial animal husbandry production, resulting in new outbreaks of epidemic disease in some regions. In addition, to ensure quality in China's livestock and poultry products, we must conscientiously prevent the spread of animal and fowl disease from abroad and strengthen quarantine of imported livestock and poultry. This work affects the growth of China's animal husbandry industry and the physical health of her people and warrants careful attention from relevant departments.

The quality of veterinary drugs is also a big problem. Nationally, too many of these drugs are substandard. Most serious is the fact that some people have taken advantage of economic liberalization to counterfeit drugs and to pass off inferior medicines as good ones. According to incomplete statistics, 700 types of counterfeit veterinary drugs have been uncovered in recent years, which problem disrupts veterinary work, causes serious economic loss and produces harmful effects among the masses.

China now has 360,000-plus people engaged in livestock and poultry veterinary work, but only one-fifth of this personnel has received specialized secondary, college or higher levels of education, and the number of people specializing in veterinary drugs is especially small, accounting for less than one ten-thousandth of the total. The low quality of veterinary personnel poses a serious impediment to the smooth development of disease prevention and quarantine work.

Thus we suggest that relevant departments strengthen leadership over veterinary work, conscientiously enforce relevant laws and regulations and ensure that laws are obeyed and infractions punished. In addition, we must increase awareness; effectively carry out veterinary work; guarantee access to needed human, financial and material resources; and conscientiously strengthen construction of facilities and training of personnel for disease prevention and eradication. We must also arrange production of veterinary drugs and equipment, establish better disease and drug monitoring and testing systems and reform the disease prevention and eradication system.

12431
CSO: 4007/387

NATIONAL

XINHUA CITES RENMIN RIBAO ON AGRICULTURE

OW031804 Beijing XINHUA in English 1518 GMT 3 Nov 86

[Text] Beijing, 3 November (XINHUA)--The PEOPLE'S DAILY called for boosting agricultural output today, describing it as a "vital issue" confronting China.

In an article by its correspondent, Chen Jian, the paper said China should have no technical problem with raising its average grain output to about 4 tons per hectare since many counties produce more than 7.5 tons per hectare.

But the record average grain output harvested by the country in 1984 was only 3.6 tons per hectare.

Since cash crops yield more income than grain, the country can increase its agricultural income significantly if the area for grain crops is reduced to grow cash crops, as Shanghai, Zhejiang and Guangdong have done.

Examples are Fengrun County, Hebei Province, where per person income increased more than 200 yuan last year, accounting for 40 percent of the peasants' total income, and Huanggang Prefecture in Hubei Province which had an output value of nearly 4,500 yuan per hectare last year--double the national average.

"If the other provinces could raise their grain output to match those of Hubei and Hunan, China's crop output value could go up 47 percent, and if they could reach that of Zhejiang Province, an additional value of more than 250 billion yuan (67.6 billion U.S. dollars)--equivalent to the country's net agricultural output value in 1985--would be produced," it said.

To develop such high-efficiency agriculture, the paper said, the nation should raise the level of scientific farming and knowledge of market economy, and put more funds into agriculture.

China has an average farmland area of 3.3 hectares per able-bodied peasant, one-third that of Japan, one twenty-fifth that of Hungary and one three-hundredth that of the United States, but the per hectare grain output is only two-thirds that of Hungary and a half that of Japan.

At present, each farmer in China produces a value of 1,000 yuan (270 U.S. dollars) annually.

/12232
CSO: 4020/44

NATIONAL

AGRICULTURE SEEN IN FUNDAMENTAL POSITION

Beijing NONGCUN GONGZUO TONGZUN [RURAL WORK NEWSLETTER] in Chinese No 8,
5 Aug 86, pp 4-5

[Editorial: "Further Strengthen the Fundamental Position of Agriculture"]

[Text] "The development of the national economy is founded on agriculture. This not only reflects economic laws but also natural laws. This must be a steadfast, long-term strategic policy." When thinking about past experiences and when looking ahead to future developments, we appreciate even more the correctness and importance of the conclusion in the Central Committee's Document No 1 this year. China's experience in socialist economic construction instructs us that agriculture affects the national economy and the people's livelihood. If agriculture does not develop, then it is difficult for industry to develop. The expansion of agricultural production sustains and influences the development of the entire national economy.

Look also at the facts from recent years: Between 1979 and 1984 in China, average annual growth in the GVAO was 8.98 percent. The average annual increase in grain production was 17 billion kg, and in cotton production, 650,000 tons. The average annual increase in cash income earned by peasants' selling farm products was 17.2 percent, and the average annual increase in net cash income was 21.1 percent. The improvement in agricultural production helped growth throughout the national economy. At the same time, the average annual increases in the total value of social production and in national income were 8.96 percent and 7.92 percent, respectively. Data shows that of the 179.8-billion-yuan increase in the value of social commercial sales between 1979 and 1984, approximately two-thirds came from peasants. During this period the average annual increase in the value of national industrial production was 8.88 percent. According to data on agricultural consumption and production, the expansion of rural demand for basic consumer items was directly linked to this. A preliminary estimate is that of the average annual increase of almost 8 percentage points in the value of total national production, approximately 5 to 6 percentage points were contributed by growth in the agricultural economy. The following conclusions can be drawn: The most important factor in the growth of the national economy between 1979 and 1984 was the rapid growth of the agricultural economy, which was based on uncommon growth in primary agricultural goods. Moreover, the growth in

the national economy provided an excellent economic environment for the reforms of the economic system. Therefore, the prosperity of the agricultural economy not only directly affects the growth of the national economy, it also closely affects the smooth implementation of economic reforms.

In 1985, there were comparatively large natural disasters and there was also planned reduction in the area planted in grain and cotton, so the total production of cotton and grain dropped. Nevertheless, it was a year of good harvests. Overall, the agricultural situation was excellent. Supplies of material goods were abundant and it was easy for people to ignore agriculture, the foundation that once was weak. In recent years, peasants in some districts have lost interest in raising grain. Also, according to surveys of some provinces and cities, during the first quarter of this year the rate of growth in peasants' cash income was smaller than in past years. Yet expenses during the same period increased over those in past years. These signs show that during the second phase of reforms in the agricultural economy the development of agricultural production has encountered some new constraints. If they are not conscientiously addressed, it will be very difficult to have continued growth in the agricultural economy or to have grain production reach a new step, the goal of 450 billion kg. Therefore, we must appeal to all levels of the party, to all levels of cadre, and to all occupations and industries. Conscientiously study the spirit of the No 1 Document of this year. Appreciate further the fundamental position of agriculture. Employ all possible measures to strengthen the agricultural base. Increase rear support of agricultural development. Firmly stabilize and increase peasant income. Of course, we also can see that within the agricultural economy there will be changes in the relative values of production of the various lines, as the national economy advances. The share of agricultural production will tend especially to become smaller. It is estimated that the total value of agricultural production will drop from being 26 percent in 1983 of the combined total GUAO to approximately 21 percent in 1990. Surveying the course of industrialization in the world's developed countries, the relative decline of agriculture and the relative gain in industry are phenomena that are laws. However, the relative decline within the national economy of the GUAO does not mean that its fundamental role has diminished. Precisely the opposite. The more that agriculture yields top position to industry, the more important becomes its strategic position. Moreover, we are a large country with a population of 1 billion. We must rely upon ourselves to solve the food problem. In recent years, although grain production has broken unprecedented levels, there has been a contradiction between the steady increase in demand for grain and unstable production. This has been caused by demands from economic construction and increased population and by the constraints on production conditions. As before, now, and for a long time to come, this will be a fundamental problem that must be continually addressed. Therefore, grain production cannot be lightly regarded at any time or under any circumstances.

Villages are the largest market for urban industrial goods. China's industrial development is based on the domestic market, which first of all is the rural market. To be sure, changes in the structure of rural production will shift a portion of the rural population into industrial production.

However, the decline in the population and the increase in agricultural mechanization means an increase in the organic composition of agricultural production. In addition, newly started rural industries and tertiary industries will install even more production materials. Without a doubt this will greatly increase demand for production materials needed for industrial products. It will further expand the market for industrial goods. In the future, as agriculture modernizes and increases investment, there will be increased consumption of industrial materials. Villages, will be, as before, the most reliable and largest market for industry. If peasant incomes decline, the retail market for industrial goods will shrink. Therefore, developing agricultural production and increasing peasant incomes are directly related to the expansion of the industrial market and the development of the national economy.

The key to further strengthening the fundamental position of agriculture is conscientious study of the problem of how best to improve rear support for agricultural development. Compared to other sectors in the national economy, agriculture has a low rate of capital utilization, demand for primary agricultural products is inelastic, and profits are small. Moreover, agriculture is constrained by natural conditions, so it is difficult to balance inputs and outputs, and risks are large. In recent years, the sustained growth of agricultural production is, of course, primarily due to the tremendous power of policies. But we should not also ignore the role of the accumulated material investment over a long period in the past. During the Seventh 5-Year Plan, the average annual increase in grain production will be 10 billion kg. To reach this new level requires not only continued use of the power of policies, it also requires new material investment to serve as a base. To improve rear support of agricultural development, it must be stressed that the state, collectives, and individuals all must work hard to strengthen the material and technological base of agriculture. The peasants should be able to obtain reliably sufficient quantities of modern production materials, such as new superior seed varieties, high-quality chemical fertilizers and agricultural machinery, fuel, etc. There must also be improved transportation, storage of agricultural goods, food processing, agricultural waterworks, and construction of other basic facilities. Already existing basic facilities must be renovated, better managed, and more fully utilized, so their usefulness can be even further exploited.

It has been more than half a year since this year's No 1 Document was issued. The broad masses of rural cadre and peasants all agree that the Central Committee accurately saw rural problems and proposed timely and effective measures. Especially important is the reiteration of the fact that agriculture is the foundation of the national economy. It also clearly set concrete measures such as those concerning the setting of grain-purchase contracts, increasing agricultural investment, and further reforming the circulation system. However, it should be emphasized that up until now there are some places that have not correctly implemented the policies and measures set forth in the No 1 Document. This of course has influenced the motivation of the peasants to produce. Therefore, the most important tasks in further strengthening the fundamental position of agriculture, at present, are to

resolutely deepen economic reforms in the villages, and expend great effort implementing the set of policies and measures set forth by the Central Committee, particularly the spirit of this year's No 1 Document.

Strengthening the fundamental position of agriculture certainly is not returning to the old route of "taking grain as the key link." Instead it refers to actively expanding multicrop operations and rural industries, at the same time that grain production is maintained well. This will provide more employment opportunities to peasants and will promote the full prospering of the agricultural economy. Only by developing rural and tertiary industries can there be funds accumulated for agriculture production, thus establishing the material basis for the modernization of agriculture. This will permit more labor power to be shifted, raising returns on the scale of operations in agriculture and raising agricultural production to new levels.

12994/12948
CSO: 4007/509

NATIONAL

PAPER URGES IMPROVEMENT IN RURAL DRINKING WATER

OW041058 Beijing XINHUA in English 1042 GMT 4 Nov 86

[Text] Beijing, 4 November (XINHUA)--The Chinese Government has committed itself to providing safe drinking water to an additional 200 million rural residents over the next 5 years, the PEOPLE'S DAILY reported today.

One-half of China's 800 million people in rural areas already have access to safe drinking water, the paper said, quoting reports made to the first national meeting on improving rural drinking water, which ended Monday in Ningbo City, Zhejiang Province in east China.

At the meeting, Liao Hansheng, chairman of the Central Patriotic Public Health Campaign Committee, said the work of the next 5 years "will not only benefit people in China it will provide an example for the developing countries of the world."

In 1981, China endorsed the UN International Drinking Water Supply and Sanitation Program for the 1980s. The goal of the program is to provide drinkable water to 2 billion of the world's people by 1990. In many countries, including China, "drinkable water" includes water that requires boiling for safety.

/12232
CSO: 4020/44

NATIONAL

FUTURE CROPPING PATTERNS ANALYZED

Beijing NONGYE JISHU JINGJI [ECONOMICS FOR AGRICULTURAL TECHNOLOGY] in Chinese No 6, Jun 86 pp 20-22

[Article by Li Yuanzhu [2621 6678 6999]: "The Composition of Crops and Agricultural Modernization in China"]

[Text] The urban and rural economies of China now have entered a period of deep change. It is predicted that by the end of this century there will be even greater development and change, and the standard of living will rise even more. However, agriculture's position as the foundation of the national economy will not change. There will also be no diminishment in the important roles that crops play in directly supplying society with materials for production and consumption. One of the basic goals in the modernization of China's agriculture is to establish a system of agricultural production that has high and steady yields, high efficiency and quality, and positive production cycles. Only then can agriculture best shoulder the heavy responsibilities of helping to promote the economic growth of the urban and rural economies and to improve the standards of living. While completing these tasks, rationalization of crop composition is especially significant. First, within crops, building a basic structure that has a reasonable ratio of various crops is the only way that grain can be steadily supplied to society. It is also the only way to supply the raw materials for light industry and the other critical materials needed for production and consumption. It also opens a new path for the full utilization of natural resources and socioeconomic conditions within all of agriculture. This will help the comprehensive development of agriculture and the realization of modernization.

I. Several Important Problems That Must Be Solved Before Improving Crop Composition

A. The ratio of grain and other crops planted must be properly set, based on the principles of truly adhering to natural and economic laws. In districts where conditions permit, self-sufficiency in grain should be maintained. Expansion of other commercial cash crops is based on the premise of stable and growing grain production, and proceeds from natural resource strengths in the area and accords with supply and demand in the market.

B. The rational adjustment of crop ratios should be centered on improving the standard of living and the structure of diets and clothing. The proportion of fodder crops should be increased, establishing an absolutely stable crop structure of grain, fodder, and cash crops. This is needed for the expansion of animal husbandry and other lines. The internal composition of crops should change in the direction of more diversification, higher efficiency, better nutrition, and higher quality, in order to meet society's future demand for higher quality crop products.

C. The system of intercropping or rotationally cropping bean crops with other legume or fodder crops definitely must be maintained, proceeding from the premises of raising economic efficiency and helping the long-term interests of production. This will join together utilization and replenishment of the fields. At the same time, there should be reasonable amounts of area planted in peanuts, in those areas that are appropriate for planting cotton and peanuts. This provides high-quality fodder for livestock, as well as providing raw materials and a source of goods for the food-processing industries and export trade.

D. Irrational cropping patterns and cultivation methods should be adjusted and reformed, based on the principles of obtaining the most results from utilizing natural resources and obtaining the largest economic benefits. Especially in those areas in which the arable land is small but the area has a favorable climate, or water resources, or other natural resources, more thought should be given to expanding all dimensions of crop plantings. For example, a comprehensive agricultural system could be established, encompassing sericulture, aquaculture, grain, hogs, and other elements.

E. The care of agricultural plants should meet the demands of improving the composition of crops. Superior varieties should be raised that incorporate the best local features and that offer high-quality food uses or high-yield fodder uses. Strengthening yields and disaster resistance and raising the stability of the crop combinations will improve the basic function of crop structuring.

F. The old production style of using coarse methods and getting poor yields must be changed. Production management that uses intensive cultivation should be established. To accomplish this, the laborers' educational and scientific farming levels must be raised.

II. The Main Indicators of the Rationalization of Crop Composition by the End of the Century

A. Agriculture will be able to meet society's demands for agricultural products. Moreover, it will hasten the expansion of relevant industries. At minimum, there will be the following main elements:

1. Grain supplies for the people. In the future, besides guaranteeing sufficient quantities, there also will be improvement of variety and of quality, to meet the demands of a higher standard of living.

2. Raw materials for production. Will be able continuously to supply high-quality raw materials for the fodder-processing, food, brewing, textiles, and other industries. Will help the speedy expansion of meat-based and other food products and of commercial clothing. By the end of this century, complete improvement in the structure of diet and clothing will mean reaching the level of a comfortable material life.

3. Rural expansion of commercial production. Will be able to produce famous, high-quality, and special products according to local resources and the demands of domestic and foreign markets. This will be the basis for the rural expansion of township and town enterprises that produce commodities and the expansion of China's foreign trade.

B. Able to guide the positive rotation of agricultural production, helping insure that the entire agricultural production structure follows the course of mutual assistance. The expansion of other kinds of production will not be hindered because of insufficient supplies of grain or other agricultural products. Nor will the balance between demand and production, environmental balance, be damaged by the imbalanced ratio of the structure or because of inappropriate planting methods.

C. Able to fully and rationally utilize natural resources in agriculture. This will reduce energy use, lower investment, save capital, and improve economic returns.

D. Able to maintain and improve the productive capacity of the soil afterward. The fields are the very basis of cultivation. The quality of the fields is an important factor that restricts the level to which agricultural production can be expanded. Therefore, the internal composition of crops should help all kinds of agricultural crops fully transform their botanical capability into functionality. They should supplement the soil and create favorable conditions for subsequent production.

E. During production, they should have strong strain capacity to handle all of the complicated natural conditions and other production conditions. For example, in order to overcome the impact of frequently occurring natural disasters in a locality, the rational deployment of first- and second-line crops can form a structure that will be able to serve as a kind of guard.

III. A Forecast of Crop Composition in the Year 2000

The following chart is a prediction of the composition of crops in China in the year 2000, based on the main objectives that rationalization of crop composition requires in the first steps of modernization during the latter part of this century, and based on the problems that may be solved by implementation of these objectives:

Crop Composition in the Year 2000

	1980		2000 (estimate)		2000 and 1980 Compared	
	Value of Production (100 million yuan)	Relative share (%)	Value of Production (100 million yuan) *	Relative share (%)	Change in Value (%)	Change in relative share (%)
Total Crops Planted	1,415	100	2,517	100	77.9	-4
Food Crops	1,014	72	1,722	68	69.8	+4
Cash Crops	227	16	500	20	120.3	
Other Crops	174	12	295	12	69.5	

* Calculated on the basis of constant 1980 prices

Comparing the prediction for the year 2000 with the present, it is easy to see that by the end of this century crop composition will be much better and more rational. This principally is because of the following:

A. Grain production: The area planted in the year 2000 will not be different from what it is today. But by fully exploiting the potential to increase production, per unit yields will improve 65.1 percent. Total production will reach 10,537,000,000,000 jin. Based on the estimated 1.2 billion population at the end of this century, per capita grain production will reach 878 jin [figures as published]. This level will insure that China's people will have abundant grain. This means that at least in terms of quantity there will be sufficient fodder and food products needed for the expansion of animal husbandry and sufficient raw materials needed for brewing and other industries. Moreover, because the area planted in rice, wheat, and small grains will be stabilized, the area planted in sorghum, sweet potatoes, and other coarse varieties will establish an effective basis for the future improvement of living standards, the improvement of diet composition, for moving toward finer grains, more variety, and greater nutrition.

B. Stable and increasing grain production will eliminate the contention between using land for grain crops or for cash crops. Important economic crops, such as cotton, edible oils, sugar, hemp, and tobacco, and other special economic crops which are small but which have wide uses and high economic value will expand to the potential permitted by planning. This will effectively help the expansion of multicropping in the future. As for the internal composition of economic crops, it will be adjusted according to future consumption demands and domestic and foreign market demands. The area planted in cotton and tobacco will decrease, and the area planted in edible oils, sugar, and hemp will increase. The area planted in other cash

crops will be stabilized. The superiority of this kind of production distribution will ultimately be shown in meeting the future demands of consumers and industries, in stimulating the domestic marketplace, in expanding export trade, and in spurring balanced expansion of the national economy.

C. Based on stable and increasing production of grain and cash crops, the area planted in fodder crops will significantly increase. Moreover, in the southern rice-growing districts, the proportion of area planted in corn will increase so that most villages will steadily become production structure models production of combining grain, fodder, and cash crops. In addition, the area planted in soybeans, peanuts, and other high-protein legumes will be greatly increased. Therefore, their significance certainly is not restricted to their providing a source of large-quantity, high-quality fodder for aiding the expansion of animal husbandry industries. They will also reduce transport of fodder, save production capital, and raise economic returns.

D. There will be expanded planting of legumes such as green manure crops, soybeans, peanuts, and other crops that add to soil fertility by nitrogen fixation at the roots. Moreover, they will be established as a part of the planting system in each locality. This will be extremely beneficial for ecological balance and will help in implementing positive rotation of agricultural production.

E. In the year 2000, the increase in the value of cash crops will far surpass that of grain crops. Moreover, within the structure of crop-production values, the relative position occupied by cash crops will increase and that occupied by grain crops will decrease. This will indicate that the undesirable phenomenon of the past, of simple grain production in the crop structures, will be much improved.

IV. Favorable Conditions for the Rationalization of Crop Composition by the End of the Century

A. During the Sixth 5-Year Plan, production of grain and of cotton, edible oils, and other important cash crops was stabilized and increased significantly. The important contradiction between the expansion of grain and cash crops already has been resolved. This will help in the planned planting of all kinds of crops in the future.

B. Both inside and outside China, the consumer markets for agricultural products currently are expanding. China's rural secondary industries, such as animal husbandry, aquaculture, and food processing, and tertiary industries are expanding. Consumer demand, which increases daily, will produce a reaction in crop production, helping in reproduction and extended reproduction of crops.

C. The material and technological base of crop production currently is being improved. There is comparatively large expansion of agricultural machinery, chemical fertilizers, pesticides, electric power, and the production of other production materials. This will insure that there will be the needed

material investments in crop production. It also strengthens the capabilities to withstand natural disasters, which helps stabilize and increase agricultural production.

D. Biogas, solar and wind energy, small-scale rural hydroelectric projects and other new methods for solving rural energy shortages have been discovered and in many places are being used. This will help return compost to the fields and improve soil fertility.

E. The flow of market information is gradually being expanded. The state is actively in the process of adjusting irrational purchase or retail prices of agricultural products. A rationalized price structure currently has begun to be established. This will help the peasants quickly adjust the composition of agricultural production in accordance with the laws of supply and demand.

F. Agricultural science and technology presently is advancing. The peasants increasingly want to master modern science and technology. This will cause the structure of knowledge in the broad numbers of villages to change. This will increase the peasants' consciousness of expanding production according to natural and economic laws.

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NATIONAL

REFORM OF RURAL CREDIT COOPERATIVES

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 8, Aug 86 pp 38-40

[Article by Lu Lianxiang [6424 1696 4382]: "A Discussion of the Reform of Rural Credit Cooperatives"]

[Text] Credit cooperatives are important components of the rural cooperative economy. They have, throughout the nation, various kinds of deposits exceeding 72 billion yuan and loans amounting to 40 billion yuan. They also account for 78.43 percent of the savings deposits held by the agricultural Bank and credit cooperatives in the rural areas, 76.75 percent of the loans extended to peasant households, and 47.77 percent of loans extended to town and township enterprises by the Agricultural Bank and credit cooperatives. It is thus a matter of urgency to bring about thoroughgoing reforms in credit cooperatives in line with the policy of the CPC Central Committee and the State Council and to take full advantage of the favorable financial situation of credit cooperatives to promote the development of the commodity economy.

It has been over 5 years since the financial and economic leadership team set up by the central government in 1980 pointed out the need for the reform of credit cooperatives. During this period, the CPC Central Committee and the State Council have on a number of occasions set forth various policies and principles for the reform of credit cooperatives. Although some progress has been made by various localities in the implementation of such policies and principles, what has been accomplished has by no means been sufficient to meet the need for the development of the commodity economy in the rural areas. One conspicuous problem in the reform of credit cooperatives is the increasingly sharp conflict of economic interest between the Agricultural Bank and the credit cooperatives and the difficulty of bringing about a measure of coordination between the two. Since both the Agricultural Bank and the credit cooperatives are engaged in credit loan operations in rural areas below the county level, it follows that when credit cooperatives increase the volume of their operations, those of the Agricultural Bank are reduced and that when profits for credit cooperatives are increased, those for the Agricultural Bank are correspondingly diminished. Thus, credit cooperatives have become not only a "rival," but a formidable one at that, of the Agricultural Bank. Under such circumstances, it would be difficult for credit cooperatives to be given autonomous powers in their operations and to be permitted to play their full role in the extension of

loans to the people in accordance with the provisions of the reform policy under the leadership of the Agricultural Bank and to become a component part of the rural cooperative economy.

What, then, is the proper course of action? Opinions differ as to how the thoroughgoing reform of credit cooperatives should be brought about. The following are the three major viewpoints:

1. Credit cooperatives should continue to be reformed in accordance with the relevant policy decisions of the CPC Central Committee and the State Council under the leadership of the Agricultural Bank. The existing modus operandi should continue to be developed so long as the conflict of economic interest between the Agricultural Bank and the credit cooperatives can be resolved. As a matter of fact, this method of finding a solution to the problem has been adopted by most localities, though with limited results.

The basic reason for the lack of success is that a "private plot of land" as represented by credit cooperatives is, as a matter of fact, retained by the Agricultural Bank. When the Agricultural Bank fails to fulfill its credit loan quota, it is the credit cooperatives which have to take up the slack; when the Agricultural Bank runs short of funds, it is the credit cooperatives which are required to put in large amounts of deposits; when the Agricultural Bank lacks the financial means to construct office buildings, it is the credit cooperatives which have to furnish the funds for their construction on the understanding that the completed buildings are to be used by both. While this situation does not apply to each and every cooperative, it has been found to be generally the rule rather than the exception. It is for this reason that such clearcut policy stipulations as that forbidding the Agricultural Bank to issue directive quotas regarding the amounts of credit loans and bank deposits to the credit cooperatives have failed to be observed in many localities. If thoroughgoing reforms of credit cooperatives are carried out according to policy stipulations, if autonomous powers of operation are restored to credit cooperatives, and if the "cooperatives are given back to the people," it will mean that the Agricultural Bank will have to give up this "private preserve" and to "cut a piece of flesh" from its own body. Thus, in the absence of changes in the existing system, it remains to be seen whether the effective reform of credit cooperatives can be brought about in accordance with policy stipulations.

2. The Agricultural Bank should be merged with credit cooperatives to form semiofficial and semiprivate agricultural cooperative banks to be placed under unified management and accounting (or accounting at different levels) and to be held jointly responsible for profits and losses. The standpoint of those holding this view is that such an arrangement would resolve the conflict of economic interests between the Agricultural Bank and the credit cooperatives without jeopardizing the interests of the departments of the Agricultural Bank. This proposed merger is not because of a need to meet the development of the cooperative economy in the rural areas. Joint financing should be enlivened in line with the rules for reforming credit cooperatives. This should effectively spur on the development of the rural commodity economy. Regarding the overall reform of the entire finance system, we must first of all break up

the unitary vertical management system under which specialized banks operate and engage in the development of horizontal accommodation of funds in order to meet the need for the joint horizontal development of the economy. The concept of establishing an agricultural cooperative bank fails entirely to take into consideration the basic problem of the need to reform the banking system. On the contrary, it merely calls for the making of certain readjustments to maintain and to consolidate the existing system. The flaws of this system, running counter as it does to economic principles, have been gradually exposed as the specialized banks seek to engage in operations in a businesslike manner. Such flaws cannot be eliminated by the establishment of agricultural cooperative banks.

3. It is necessary to alter the jurisdictional relationship of credit cooperatives by putting them under the leadership of the People's Bank of China instead of that of the Agricultural Bank. Specifically, it is necessary to turn the integrated credit cooperatives on the county level into the operations management type of economic entities (the existing county integrated cooperatives are but an empty shell with only a signboard hanging in the county Agricultural Bank) to exercise control over credit cooperatives at the basic level, to engage in certain operations and to offer services to credit cooperatives at the basic level under the leadership of the People's Bank of China. Thus, three banking institutions, namely, the Industrial and Commercial Bank, the Agricultural Bank, and credit cooperatives, will coexist at the county and subcounty levels to compete for existence and development. In view of the need for the development of the commodity economy, that is the best program conceivable that is also in line with the "Temporary Provisions for the Management of Banks in the People's Republic of China." The adoption of this program will, however, make it difficult for the Agricultural Bank to maintain their offices in certain areas. That is why most of the comrades in the Agricultural Bank are adamantly opposed to this program.

It is the view that this program meets the following needs for speeding up the development of the commodity economy in the rural areas as well as that of the rural cooperative economy.

1. The Need To Develop the Commodity Economy: According to the law of values, it is certain that the production and circulation of commodities will break though, and are in the process of doing so, regional partitions and demarcation lines set up by the various trades and businesses and the ownership systems, that integrated economic entities will emerge in the cities and rural areas, that the agricultural, industrial and commercial sectors will merge into an organic whole and that there will emerge various forms of integrated economic entities formed by the merging of state, collective and individual enterprises. This program which, as a matter of fact, is being vigorously developed, has made higher demands on the credit loan service departments, that is the credit cooperatives, to break through regional demarcations and restrictions imposed by the division of labor if they are to render vertical and horizontal credit loan services to society on a wider scale. These services will first be made available in small cities and towns such as county towns and, with the increase in commodity production and the expansion of the scope of purchasing and marketing operations, will be gradually developed. To meet the needs for

economic development, integrated credit cooperatives--integrated economic entities--will first be established in county towns and later developed on a wider scale. Rather than being a subjective and man-made conjecture, this is in line with the trend for the development of the commodity economy.

2. The Need To Develop the Cooperative Economy: The link coordinating the planned commodity economy, the macroeconomy, and the microeconomy in the development of the rural areas is provided by integrated economic cooperatives. According to the system of contracted responsibilities linking remuneration with total output adopted in the rural areas, household operations represent the basic level of the cooperative economy in the area of production, while the various forms of integrated economic entities created on such a basis represent another level of the cooperative economy. In order to further develop the cooperative economy, the supply and marketing cooperatives have decided to restore their integrated cooperatives at various levels. The emergence of integrated cooperatives at various levels is inevitable in the course of the development of the cooperative economy in the areas of production and services. It is the function of credit cooperatives to promote the production, the purchasing and the marketing of commodities. The emergence of various integrated economic cooperatives in the areas of commodity production and circulation is certain to lead to the establishment of integrated credit cooperatives to meet the demands for the development of the cooperative economy. In order to develop the cooperative economy in the rural areas, it is necessary to turn the existing integrated credit cooperatives into the operations management type of economic entities and to place them under the leadership of the People's Bank.

3. The Need To Develop the Cooperative Economy: Due to the uneven rate of economic development in various areas and other factors, the amount of funds at the disposal of credit cooperatives differs one from another. Furthermore, due to the different farming seasons in different areas, the credit cooperatives within the same county and among the counties, regions, and even provinces must take it upon themselves to make up for each other's shortage of funds with their surpluses on the principle of mutual benefit. The best way to organize this type of regulatory mechanism is to establish integrated credit cooperatives with autonomous powers to engage in operations under the leadership of the People's Bank.

4. It Is Necessary To Initiate Fund and Account Transfer Operations: With the development of the commodity economy, the frequent purchasing and marketing operations, and the crisscrossing channels for purchasing and marketing, there has been an increase in the frequency of receipts and payments as well as in the amount of funds involved. To meet the needs for the purchasing and marketing of commodities, credit cooperatives must initiate various forms of fund and account transfer operations and integrated credit cooperatives must be turned into the management and operations type of economic entities to form a network for the settling of accounts. The gradual increase in the volume of fund and account transfer operations and the corresponding reduction in the use of cash for settling accounts are in line with the objective demand for the development of the commodity economy and such services should be provided by the banking departments.

The existing conflicts of economic interest between the Agricultural Bank and the credit cooperatives may be summarized as follows:

First, the various types of economic associations developed by peasants who engage in household operations require the credit cooperatives to break through the rural boundaries and to provide them with high-quality services, including the accommodation of funds and the transfer of funds and accounts on a wider scale. According to the provisions of the system of the Agricultural Bank, however, it is the bank and not the credit cooperatives that engages in operations in areas above the township level. Thus, manmade restrictions have been imposed on the development of the favorable cooperative banking situation.

Second, the interest rate set by the Agricultural Bank for funds being transferred from the credit cooperatives to the Agricultural Bank is lower than the average cost incurred by credit cooperatives in absorbing various types of saving deposits. That means that, in addition to collecting more funds from the credit cooperatives (a considerable part of the funds made available to the Agricultural Bank is derived from funds deposited by credit cooperative, amounting to 40.8 billion yuan at the end of 1985), the Agricultural Bank also causes them to suffer financial losses.

Third, it should be, and has always been, the responsibility of the Agricultural Bank, in its leadership capacity, to provide training for staff workers of credit cooperatives. Furthermore, a large part of the operations of the Agricultural Bank is entrusted to credit cooperatives. That means that unless the quality of credit cooperative staff workers is improved, the quality of work being done by the bank is bound to suffer. In other words, whether from the leadership responsibility point of view or that of the operations of the bank itself, the Agricultural Bank should hold itself responsible for providing effective training such as has been done in the past, to staff workers of credit cooperatives. That, however, has not been the case. The agricultural Bank in many localities has not taken seriously the work of providing training to credit cooperative staff workers or has even neglected it altogether.

Fourth, those comrades engaged in the credit cooperative management departments in the Agricultural Bank have been subjected to censure. The specific responsibility for providing leadership to credit cooperatives is being assumed by the credit cooperative management departments at various levels in the Agricultural Bank. Those comrades engaged in credit cooperative operations should hold themselves responsible for doing what they can to make credit cooperatives vigorous and going concerns. Otherwise, they would be remiss in their duties. In view of the conflict of economic interest between the Agricultural Bank and the credit cooperatives, however, those comrades who seek to invigorate the operations of credit cooperatives are often given the cold shoulder. They have, for instance, been compared to Guan Yu [7070 5038], "who worked for Liu Bei [0491 0271] while in the employ of Cao Cao [2580 2347]." They have even been accused of "living off one person while secretly helping another," accusations which have seriously damaged the positive attitude of those comrades engaged in the work of credit cooperatives.

The above-mentioned problems would not exist if the integrated credit cooperatives at the county level were turned into the management and operational type of economic entities, if unified control were exercised over credit cooperatives at the basic level and if they were placed under the direct leadership of the People's Bank.

It is my opinion that overall consideration should be given to the problem of reforming credit cooperatives in view of the fact that such reforms also involve the reform of the finance system in the rural areas. The three following principles should be taken into consideration when the problem is being studied. First, consideration should be given to the need to promote the development of the planned commodity economy, since banking operations are intended to promote economic development and to lose sight of the main objective of promoting the development of the commodity economy would render meaningless the existence of financial institutions. Second, it is necessary to look at the overall situation and to conceive of the entire nation as a chessboard. It was in this regard that Comrade Mao Zedong had occasion to make the incisive comment that when a conflict of interests occurs between the whole and its parts, precedence must be given to the interests of the whole. The same rule shoud apply when we study the banking system in the rural areas. We must look at the situation as a whole when we study the feasibility of setting up offices. Third, the development of the planned commodity economy requires that we exercise effective macroeconomic control while invigorating the microeconomy and pay equal attention to both and not overemphasize one at the expense of the other.

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NATIONAL

ICE RUN DISASTER OF HUANG HE CONTROLLED

OW290720 Beijing XINHUA in English 0641 GMT 29 Oct 86

[Text] Jinan, 29 October (XINHUA)--The disastrous ice run of the Yellow River has been brought under control in the lower reaches for 30 years, according to an official of the Shandong Province Yellow River conservation office.

While the ice run used to be an annual cause for worry, conservation efforts have prevented floods for the past 30 years and regional fears have been eased.

During an 83 year period from 1855 to 1938, ice jams caused the Yellow River, the second longest in China, to flood its banks 74 times.

Since the 1950s massive construction projects have all but eliminated the dangers of ice jams. In 1985 an ice jam caused the water level of the lower reaches of the river to rise to a new record but there was no flooding. The icy run off was diverted to Sanmen Gorge reservoir in the north and sluice gates were opened in the south as the potential flood waters passed without incident, said Bao Xichen, chief engineer of the conservation office.

The Sanmen Gorge water-control project built in 1960 has greatly alleviated the threat of the ice run by regulating the rate of flow, according to Bao.

The dikes in the lower reaches have been strengthened three times since the new China was founded in 1949. In 1970 and 1971, the narrow parts of the river in Kenli County and Jinan City were widened from 400 metres to 4000 metres to enlarge their flood discharging capacity.

Five large flood gates were built along the river to ensure the safety of the dikes.

Meanwhile, the conservation office has changed the position of the river mouth three times to improve the flood discharging capacity, said Bao.

Every year coast guard ice breakers plow through the ice at the river mouth and tens of tons of dynamite are used to "cut keys" in the ice to dislodge the most stubborn ice jams.

It remains an arduous and complex job to fight the river's annual ice run. "We should further our research to find even more effective measures to finally get rid of its threat," Bao told XINHUA.

NATIONAL

SOIL EROSION COMBATED IN HUANGTU PLATEAU

OW311410 Beijing XINHUA in English 1331 GMT 31 Oct 86

[Text] Zhengzhou, 31 October (XINHUA)--As the Yellow River meanders along the escarpment of the Huangtu plateau it begins to live up to its name.

Hundreds of tributaries from the plateau merge with the torrents of the 5,000 kilometer long river and together they eat away at the plateau itself. The Yellow River travels another 2,000 kilometers to sea and with it goes 14 billion tons of silt from the far away plateau.

Data gathered by Chinese river specialists show that each year about 4,000 tons of soil per square kilometre are eroded from the plateau. In some areas it can be as much as 10,000 tons per square kilometer.

All this makes the Yellow River the most silt-ridden river in the world.

For decades the Yellow River Conservation Committee has been trying to fight the river's silt and the main battle has been in the Huangtu plateau. Despite their massive efforts the committee has reduced the amount of silt in the river by only 5 percent.

Since the 1950's about 5.33 million hectares of land most affected by erosion have been planted with trees, 1.33 million hectares of grass have taken root and another 2.66 million hectares [have] been built into terraced fields to prevent soil erosion, according to Wang Changlu, chief engineer of the Yellow River Conservation Committee in Zhengzhou, the capital of Henan Province.

More than 30 scientific research institutes on water and soil conservation have been set up in the area in the past over 30 years.

A technical network connecting village, county and administrative regions has been formed to offer advice on stopping soil erosion.

In recent years, the responsibility system has been applied in the area to encourage farmers to plant trees and grass on the barren land.

As a result, soil erosion has been partially prevented in many areas. About 40 to 60 percent of the erosion has been stopped in the reaches of [the] Wuding River in Shaanxi Province, in the area of the Qingshui River in Ningxia Hui autonomous Region, and of Sanchuan River in Shanxi Province, according to Wang Changli.

NATIONAL

SPECIALISTS CITED ON CONTROL OF URBAN FLOODS

OW051222 Beijing XINHUA in English 1123 GMT 5 Nov 86

[Text] Nanjing, 5 November (XINHUA)--Officials need to pay more attention to urban flood control in China, experts in water conservation and city planning urged here today.

Participants at a national conference on urban flood control said floods threaten the health of China's people and the progress of the country's economic development.

"Strengthening existing facilities and building new flood control systems is a matter of great urgency," one expert said.

Others at the conference reported that major flood control projects have been completed in many of China's cities since the founding of the People's Republic in 1949. The country has build dikes with a total length of more than 5,500 kilometers as well as a flood control and discharge system, they said.

"Still," one expert argued, "as urban development continues, we'll need better flood control facilities to make sure we do not lose what we have accomplished economically to floods."

In 1984, according to another expert who quoted the latest available figures, urban industrial output value constituted 80 percent of the country's total, while urban profits and taxes made up an even greater share.

Of the 48 cities with a population of more than 500,000 in China, he said, 18 are located in coastal areas or along major rivers, and many of these are in low-lying areas, making them vulnerable to floods.

The expert said a recent survey of 97 of China's cities revealed that between them they had only 15 dikes capable of withstanding a catastrophic flood--the sort expected once a century. They had 26 dikes that could resist a serious flood--which usually occurs every 50 years.

"But the situation is even worse than it sounds," said the expert. "Most of the formidable dikes are in the northeast, north and northwest parts of the country, not in the east, central and southern parts--where the rivers and lakes tend to be."

For example, he said, the Yangtze River--China's longest--has a drainage area of 1.8 million square kilometers, including one-third of China's population, half of its industrial output value and one-quarter of its cultivated land.

"Hit by a serious flood, countless people in the area would die, and the economic loss would approach 50 billion yuan (13.5 billion U.S. dollars)," he said.

"Think what that would do to the country's economic development, to say nothing of people's lives."

In recent years, the Yangtze's ability to discharge flood waters had been cut by 20 percent by new factories along the river bank, improper waste disposal and other factors, he said.

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NATIONAL

GUANGMING RIBAO NOTES SHORTAGE OF AGROTECHNICIANS

OW261040 Beijing XINHUA in English 1030 GMT 26 Oct 86

[XINHUA headline: "Shortage of Agrotechnicians--Pressing Problem"]

[Text] Beijing, 26 October (XINHUA)--The GUANGMING DAILY today calls for new policies and measures to promote the training of young people now working in the countryside, where there is an acute shortage of technicians and other experts.

It also proposes that equal attention be given to both college-trained specialists and those crack hands who have no sound academic background.

Some 100 million rural laborers are leaving the land to work in township industries from 1986 to 1990, and efforts are being intensified to spread agricultural science and technology.

This would require millions of agrotechnicians and the present number falls far short of the needs, the paper said.

The paper quotes a 1983 survey report from the Ministry of Agriculture, Animal Husbandry and Fisheries saying that on the average, there was only 1 technician for 10,000 rural residents or 159 rural industrial enterprises.

The state had since 1949 trained 1,045,000 people through agricultural colleges and secondary technical schools. But the number of such people now working on farms was only about 150,000.

The paper proposes incentives to keep these agrotechnicians on their jobs and training to the 120 million middle school graduates now working on farms, especially those crack hands among them.

According to the paper, the policies and measures, suggested so far by the state science and technology commission, include increasing state investment in rural education, opening up rural education channel on television, setting up rural personnel training funds at county levels, opening up training classes and agrotechnical service centers, and encouraging urban self-taught students and technical personnel to work in the countryside.

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CSO: 4020/39

NATIONAL

WFP DEVELOPING FISH FARMS IN RURAL AREAS

HK040909 Beijing CHINA DAILY in English 4 Nov 86 p 1

[By staff reporter Liu Dizhong]

[Text] The World Food Programme [WFP] has approved a new food-aid project for China that bring the UN organization's commitment here to about \$460 million since 1979.

The project is aimed at developing fish farming in the rural areas of nine municipalities where fish consumption per person is much lower than the national average.

WFP will contribute \$38.5 million for food for farmers participating in the project, which will extend over 3 years. It involves construction of nearly 7,000 hectares of fish ponds on poor land in 19 counties of the 9 municipalities in Changchun, Hohhot, Yinchuan, Xi'an, Kunming, Jinan, Zhangzhou, Nanjing and Hefei. Total population of the 9 municipalities is 32 million.

Despite the rapid development of fish production over past decades, each Chinese eats on average only about 6 kilograms of fish annually, about one-third of the world average.

Fish consumption is even lower in the nine municipalities, averaging 1.4 kilograms per person.

When completed, the ponds will be able to produce more than 18,000 tons of fish a year on land that is now unused or used only marginally.

The project is a contribution to China's efforts to improve the people's diet by increasing fish and animal products, Jim Alexander, WFP director of operations, told CHINA DAILY.

The nation plans to triple its current fish production by the end of the century. By last year, total output had increased to 6.97 million tons from 4.2 million tons in 1974, putting China third in world fish production.

Several other projects for fishery development have been carried out under WFP-assisted programmes. The first project, in 1982, was for development of fishery resources in Hongze County, Jiangsu Province.

One of the three projects approved by WFP this year also involved a fishery development project in Boyang Lake of Jiangxi Province. Another was a forestry project in Pingshan County of Hebei Province.

For the projects in the nine municipalities, Alexander said, WFP will supply 300,000 tons of wheat and other food.

The WFP-supplied food is intended as an incentive for farmers to participate. It is given as part of wages to people working on the project.

Quite a number of people are involved in WFP-assisted projects. More than 150,000 families or households will take part in the fishery project in the nine municipalities, which will require 65 million days of labour.

Irrigation, land development, forestry, fishery, water-supply improvement and rural road construction are usually the major WFP-assisted projects in China. They aim at improving agricultural production and living standards of rural people in poor areas, Alexander said.

He said the WFP is "very, very satisfied" with the cooperation it has received from the Chinese Government, which is entirely responsible for implementing all the projects. Since 1979, the Chinese Government has invested an equivalent of about \$600 million, or 60 percent of the total, in the WFP-assisted projects.

"We hope to use Chinese experience to demonstrate to other countries how food can be used as a good tool for development," the director said.

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NATIONAL

CONTRACT FARMING FREES LABOR FOR FACTORIES

OW081226 Beijing XINHUA in English 0902 GMT 8 Nov 86

[Text] Nanjing, 8 November (XINHUA correspondent Yang Futian)--Technical and machinery services, on the rise in rural China, are opening new vistas for agriculture, Ling Qihong, deputy governor of Jiangsu Province, said here today.

Supported by state and local factories, the services are beyond the reach of individual households, the basic production units in the countryside.

China has contracted out fields to farming households since 1979. This has aroused the enthusiasm of the peasants and promoted production.

"Specialized services will assist the reform and help to speed up agricultural growth," Ling said.

An example is Houzai Township in Jiangsu Province, where mechanization services perform half the field work, releasing half the local labor force to work in factories.

With 482 employees, service institutions of the township, which has 2,000 hectares of farmland and 8,000 households, carry out rice seedling nursing, ploughing, plant protection and irrigation. Peasant households are engaged only in transplanting, fertilizer application and harvesting.

Technical services, provided by a system of county centers, township stations and specialized households, focus on demonstration and spreading of agro-techniques and research findings. The county centers have research institutes, crop protection, seed, soil and fertilizer stations, and technical schools.

Up to now, 700 of the country's more than 2,000 counties have established such centers, according to Yang Zhongyang, vice-minister of agriculture, animal husbandry and fisheries.

The system has spread 150 new rice strains and 470 major agro-technical findings, resulting in an extra income of 14 billion yuan (about 3.8 billion U.S. dollars) from the agricultural sector.

Machinery services are mushrooming in developed areas, including the Yangtze and Pearl River deltas, and northeast China; and about 90 percent of the villages

around Taihu Lake have machine teams to help farmers in ploughing, sowing, crop protection and harvesting, Yang said.

Last year, the country had 4.67 million tractors, 15.4 percent more than in 1984. The agricultural machines have a total of 284 million horsepower, 7.1 percent more than in the preceding year.

Following a policy of industry supporting agriculture, the services are cheap or free of charge, Yang said. In the Yangtze River delta, transplanting a hectare of paddy fields (including rice seedlings) costs only 75 yuan (about 20 U.S. dollars) or one-third of the cost if the peasants did it by hand in the traditional way.

Thanks to the services, Jiangsu Province has averaged more than 500 kg of grain per person annually over the past 3 years despite the fact that its population increased and farmland shrank.

/12232
CSO: 4020/45

NATIONAL

BRIEFS

DIVERSIFIED TREE GROWTH METHODS--Beijing, 21 October (XINHUA)--Eighty-five percent of China's 4,000 state-run tree farms have set up processing factories to make full use of local resources, according to the Ministry of Forestry. Tree farms used to concentrate on supplying lumber products with little attention to diversification, said a ministry official. By setting up processing factories in the forest zones, these farms produced 6.53 million cubic meters of fibre boards over the past 5 years, up from 3.2 million cubic meters in the previous 5-year period. According to the latest statistical report, the sales of the sideline products last year accounted for 37 percent of the total income of the state-run tree farms. [Text] [Beijing XINHUA in English 1535 GMT 21 Oct 86 OW] /12232

FORESTRY PRODUCTS PRODUCED--Beijing, 18 October (XINHUA)--China produces 25 million cubic meters of timber, 2 million cubic meters of plywood, 410,000 tons of rosin, 45,000 tons of tannin extract and 5,000 tons of shellac a year, an official said at a recent national meeting of the forestry industry. [Text] [Beijing XINHUA in English 1320 GMT 18 Oct 86 OW] /12232

COTTON GROWING CENTERS PLANNED--Beijing, 24 October (XINHUA)--This year China will develop 50 counties into high-quality cotton growing centers, an official of the Ministry of Agriculture, Animal Husbandry and Fisheries said today. The newly selected counties will receive a 100 million yuan (27 million U.S. dollars) allocation, and will become part of the cotton growing counties designated in 1985, raising China's high-quality cotton growing areas to 72. At the same time, China will choose 50 counties to set up stations specializing in cotton research and technical training. According to an agreement recently signed in Beijing, the main task of the counties will be to establish seed farms and cotton processing plants, while spreading technology to neighboring counties. In 1990, the counties are expected to have 1.3 million hectares of cotton fields, producing 1 million tons of high-quality cotton and 150,000 tons of seed. The counties are scattered throughout the Xinjiang Uygur Autonomous Region and 13 provinces, including Shandong, Henan, Jiangsu, Hubei, Anhui, Jiangxi, Zhejiang, Liaoning, and Sichuan. China produced 4.15 million tons of cotton last year, with part being exported. [Text] [Beijing XINHUA in English 0758 GMT 24 Oct 86 OW] /12232

FISHING GROUNDS MONITORED--Beijing, 29 October (XINHUA)--To put more fish on Chinese tables, the country has begun to monitor water temperature in major

fishing grounds by aerial remote sensing, according to GUANGMING DAILY. Since mid-October, the National Bureau of Oceanography has arranged 10 flights on 5 separate occasions to test the method on China's eastern sea fishing grounds and has received satisfactory results, the paper said. The new method has been proved to cover a large tract of water and get accurate water temperature readings, which can be used to determine fish distribution. The new technique is much quicker than the present method. The technique will be applied in all of the country's major fishing grounds in 2 or 3 years, the paper said. [Text] [Beijing XINHUA in English 0568 GMT 29 Oct 86 OW] /12232

MORE VEGETABLE, FRUIT ACREAGE--Beijing 30 October Chinese peasants increased the number of hectares planted with vegetables this year by 7.6 percent. The number of hectares growing fruit increased by 29.8 percent as against the figures for 1985, according to the Statistics Bureau. The total area of vegetable and fruit fields now accounts for only 4 percent of the country's farmland. Experts say there is a great potential for increasing vegetable and fruit production because these products have become a new major source of income for many peasants, the bureau said. [Text] [Beijing XINHUA in English 1233 GMT 30 Oct 86 OW] /12913

DEMAND FOR FERTILIZER--Beijing, 8 November (XINHUA)--Chemical fertilizer production should be increased to meet farmers' demands, a central government official said in today's PEOPLE'S DAILY. Over the past few months, fertilizer has been in short supply in many rural areas and factories should tap resources to produce enough fertilizer to satisfy farmers, the official from the Ministry of Chemical Industry said. "Sufficient electricity supply should be guaranteed for increased fertilizer production in the coming months," the official said. According to the paper, the ministry has already called on factories to produce another three million tons of fertilizer in addition to fulfilling the production quotas assigned for this year. By October, factories had already turned out 55 million tons of fertilizer, and they plan to produce 72 million tons next year, the paper said. [Text] [Beijing XINHUA in English 0733 GMT 8 Nov 86 OW] /12913

GUARD AGAINST FOREST FIRES--Beijing, 30 October (XINHUA)--The Ministry of Forestry has warned to be on guard against forest fires as the weather becomes drier and winds begin to pick up. An official of the ministry said here today that a massive publicity campaign on forest fire prevention should be launched, fire monitoring strengthened and fire fighting organizations should get ready. According to the latest statistics, there were 24 fires in the Yakeshi forest zone in northeastern Inner Mongolia Autonomous Region between late September and early October, four times as many as in the same period last year. Sixty fires were reported in Fujian province in the first half of October and the number of fires in Guangdong province also increased compared to the same period last year. [Text] [Beijing XINHUA in English 0811 GMT 30 Oct 86 OW] /12913

PLANS TO IMPROVE LOW-YIELD LAND--Beijing, 5 November (XINHUA)--China plans to upgrade low-yield land on the North China plain during the Seventh 5-Year Plan

period (1986-1990), today's PEOPLE'S DAILY reported. The three million hectare project is a 40 percent increase over the Sixth 5-Year Plan period (1981-1985), according to the Chinese Academy of Agricultural Sciences, the paper added. Under the five year program, 12 experimental or model areas will be set up for saline-alkali and arid land improvement using a state investment of 17 million yuan (US\$4.6 million), the paper said. "Scientists from key institutions in the provinces of Hebei, Shandong, Jiangsu, and Anhui and Henan, and Beijing and Tianjin cities will do research in improving saline-alkali land, fertilizing soil, and updating irrigation systems and cultivation techniques, the paper said. They will also make an overall plan for creating shelter-forests and exploring and utilizing agricultural resources to boost grain production on the North China plain, which is made up of 6.7 million hectares of low-yield land. [Text] [Beijing XINHUA in English 0742 GMT 5 Nov 86 OW] /12913

SCIENTISTS WARN OF ECOLOGICAL DISASTER--Beijing, 6 November (XINHUA)--A worldwide shortage of natural resources and ecological disaster is heading our way, warns an article by noted scientists in today's PEOPLE'S DAILY. Dong Zhiyong, vice minister of forestry, says resources developers must not only reap economic benefits but must also respect the ecology when exploiting what the earth has to offer. With the population boom and the development of modern society since 1960, he says, a number of countries have destructively exploited their natural resources. Ten million to 20 million hectares of forests disappear each year and one living species becomes extinct each day, according to the vice minister. He says, it is expected that at least one-sixth of all living things will be stamped out by the end of this century. Li Wenhua, research fellow of the Chinese Academy of Sciences, suggests a survey be undertaken immediately in China. He wants an inventory of plant and animal resources in the country and new laws and policies to protect them. Li also suggests a national publicity campaign be launched to raise the awareness of resource users. Along with China's efforts to control its population the scientist writes that protection of the environment is equally important. [Text] [Beijing XINHUA in English 1122 GMT 6 Nov 86 OW] /12913

IMPROVEMENTS IN ERODED AREAS--Beijing, 7 November (XINHUA)--Some 11,200 square kilometers in China's eight most seriously eroded areas have been subjected to control measures since 1982, 6.5 times the figure for the 30 years prior to 1982, the ECONOMIC DAILY reported today. A plan adopted at a 1982 national work conference on water and soil erosion obliged the eight areas, in Shaanxi, Hebei, Shanxi, Liaoning, Gansu, and Jiangxi provinces and Inner Mongolia autonomous region to free all their land from erosion in 1990. More than 350,000 rural families, in 43 counties and banners in these areas are under contract to implement the plan, and have saved half the contracted land, some 400,000 hectares, from erosion, the paper said. Trees and grass have been planted and irrigation systems constructed in the eight areas, the paper added. [Text] [Beijing XINHUA in English 1302 GMT 7 Nov 86 OW] /12913

FORESTRY DEVELOPMENT--China has made rapid progress in forestry. During the Sixth 5-Year Plan, it produced more than 6.3 million cubic meters of artificial boards, which was twice the amount produced during the previous 5-year plan. Substantial increases were also registered in such chemical forestry products as rosin, tannin extract, and shellac, whose total outputs amounted to 1.61 million, 180,000 and 7,000 metric tons respectively. In terms of annual capacities, China can now produce more than 25 million cubic meters of timber, over 2 million cubic meters of chipboard, 410,000 metric tons of rosin, 45,000 metric tons of tannin extract, and 5,000 metric tons of shellac. [Summary] [Beijing XINHUA Domestic Service in Chinese 0034 GMT 18 Oct 86 OW] /12232

CSO: 4020/43

TRANSPROVINCIAL AFFAIRS

GEOGRAPHIC SHIFT IN GRAIN OUTPUT AIDS READJUSTMENT

Beijing NONGCUN GONGZUO TONGZUN [RURAL WORK NEWSLETTER] in Chinese No 8,
5 Aug 86 p 16

[Article by Du Chunyong [2629 2504 3057], Luo Zicheng [7482 1311 4453], and
Qi Jingsheng [7871 4842 3932]: "Geographic Redistribution of Grain in the
Readjustment of the Production Structure"]

[Text] Not long ago, we surveyed problems in Jiangxi and Fujian concerning
grain production and circulation, and further adjustment of the agricultural
production structure.

Fujian is in the Asian temperate zone. It has rich resources in its hills
and in the sea and has favorable conditions for expanding foreign exchange-
earning agriculture. In recent years, to make the most of its strengths,
it has studied the "Hills and Sea Classics," and changes in the production
structure have yielded preliminary benefits. There have been large increases
in aquatic production, sugar beets, tea, and fruit. The total value of
agricultural production rose from 4.6 billion yuan in 1978 to 9.3 billion
yuan in 1985. Per capita rural income also rose from 191 yuan to 396 yuan.
However, full utilization of the area's strengths was hampered because of
grain shortages. Fujian only has on average .7 mu per person. For a long
time, its grain needs have been supplied by outside sources. Since the 3d
Plenum of the 11th CPC Central Committee, there has been relatively rapid
expansion of grain production, increasing from 7.45 billion kg in 1978 to
8.05 billion kg in 1984. However, grain consumption has also increased
continuously. At present, the total consumer already has reached 9.05 bil-
lion kg. In 1990, it will reach 10.8 billion kg. This large difference
between demand and production must depend upon grain reassessments for
resolution. In 1985, 1 billion kg of grain (under the state plan) was
reassigned. The improvement of grain supplies has become an important con-
dition in the future readjustment of the agricultural production structure.

Grain production is Jiangxi's strong suit. In 1978, grain production was
11.25 billion kg and in 1985 it had reached 15.33 billion kg. In recent
years, grain production basically has tended toward continued stable growth.
Although Jiangxi is self-sufficient in rice, it also ships large quantities
to other provinces and abroad. Much grain flows to Fujian either through
the state plan or through free-market channels. Currently, it is most

important that the two provinces be able to secure regional grain balance over a comparatively long period, under the guidance of the state plan. This will enable each to fully exploit their respective strengths.

This not only is in the basic interests of the two provinces, it also has many objective aspects. 1. Taking the long view, it will be difficult at the moment to solve the grain shortages in Fujian. If its own strengths are to be further utilized, it must have a reliable source of grain. And the longstanding grain surpluses in Jiangxi will continue. One province has shortfalls, the other surpluses. The one can redistribute to the other. 2. Geographically speaking, the two provinces are contiguous, so transportation is convenient. 3. Consumption habits are the same, and the products are suited for the market. 4. Most of the Fujian districts that have grain shortages are located along the coast. Their economies are relatively developed. They have expanded production of economic goods, in aquaculture, in industrial and sideline industries, and have earned relatively high economic returns. The masses are willing to pay for grain. 5. In 1985, Fujian consumed approximately 500 million kg of imported grain. A large amount of foreign exchange could be saved if this were supplied domestically, using the method of interprovincial balancing.

Implementation of interprovincial grain balancing should be guided by the state plan and should be based on mutual benefits. For now, the following problems should be solved:

1. Improve the motivation of peasants who produce grain. In recent years, most prices for agricultural and sidelines products have risen, yet grain prices basically have not moved at all. This has resulted in price distortions, and peasants who produce grain have received excessively small returns. Jiangxi peasants say: "Raising grain is not as good as raising melons; raising melons is not as good as panning beach sand; and panning beach sand is not as good as running tractors for transport." The closer an area is to a city or to a fairly well-developed commercial economy, the more this tendency is evident. Therefore, there should be strengthened leadership in grain production. There should also be policies that provide encouragement to peasants who produce grain. Material measures should be conscientiously implemented. There should also be great effort devoted to extending agricultural S&T to help peasants in the grain districts to transform their strengths in grain production into strengths in economics. There should also be expanded free-market redistribution of commercial grain. According to estimates by grain offices in Fujian, approximately 500 million kg of rice were moved from Jiangxi to Fujian through free-market channels. Jiangxi peasants received real benefits from this. In 1985, the state purchased grain at 31.18 yuan per 100 kg, yet the purchase price in unofficial rice markets was 36 to 46 yuan per 100 kg. Further expansion of the grain markets will help spur grain production and the motivation of the producers.

2. Expand interprovincial horizontal links. Beyond the base allocation provided in the state plan, the supply and demand of grain in the two provinces can be solved through use of horizontal economic links. The grain-supplying province can provide a steady source of grain to the other; and

the grain-receiving province can provide the other with material factors, such as funds, chemical fertilizer, construction projects for grain-producing bases, etc.

Fujian's experience also shows the suitability of interprovincial relations. Within the province, every county is treated as a separate unit. The local financial administration adds a 6-yuan subsidy to every net 100 kg of grain that is freed for outshipment. Of this, 4 yuan is provided by the province and 2 yuan is added by the locality to which it is redistributed. Whoever eats the grain must pay. About half of the 6 yuan subsidy is given directly to the peasants who sell the grain to the state. The remainder is used for extending superior seed varieties, expanding cultivation of green fertilizers, and other measures. This program has been successful because grain-producing districts and peasants fully welcome it. Using this method, grain-deficit districts along the coast that have relatively developed town-ship and town industries have taken some money and subsidized the commercial grain districts in the central and northern portions of the province where township and town industries are not very developed. "Industry Helping Agriculture" has been implemented on a fairly large scale. This has expanded production of commercial grain, and at the same time has spurred consuming districts to minimize their grain use. This is an experience that is worthy of attention.

In summary, there are three forms which can be selected from in interprovincial geographic redistribution of grain. The state reassignment of grain should be stabilized at a set base level; horizontal economic links between provinces should be established and enlarged; and free-market redistribution should be consolidated and expanded on a base of improved management. Based on the geographic balancing of grain, we must proceed in the strategic development of areas, considering comprehensively respective strengths and conditions. This will further improve the adjustment of the distribution and structure of production. This problem affects the entire economic situation. We hope that it will receive sufficient attention.

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CSO: 4007/509

TRANSPROVINCIAL AFFAIRS

JINGJI RIBAO ON DEVELOPMENT OF ARID NORTHWEST

OW251154 Beijing XINHUA in English 0832 GMT 25 Oct 86

[Text] Beijing, October 25 (XINHUA)--As a result of commodity production development in poor areas of northwest China, the standard of living is improving, today's "Economic Daily" reported.

The area, covering Xihaigu in southern Ningxia Hui autonomous region and Dingxi and Hexi in central Gansu Province on the loess plateau, has traditionally been plagued by serious soil erosion resulting from the indiscriminate felling of trees and destruction of pastures over the centuries.

With a population of seven million, it used to be classified a "poverty-stricken" area, where each peasant earned no more than a subsistence salary from collective work.

Local people have carried out the principle of "planting grass and trees to develop animal husbandry, transform the mountains and rivers, and eliminate poverty," proposed by party leader Hu Yaobang when he inspected the area in 1983.

Since then, trees and grass have been planted on more than 1.14 million hectares and 21 percent of the soil erosion area in central Gansu has been brought under control.

Tree and grass planting has boosted stock breeding, the paper said. Head of cattle, pig and sheep by the end of this year will increase 23 percent, 26.4 percent and 9.7 percent respectively over 1982.

Meat production will increase by 45.5 percent while wool and egg production will enjoy 15.7 percent and 49.3 percent increases.

Grain output in central Gansu and southern Ningxia in 1985 rose by 75.8 percent and 140 percent over 1982.

This year per capita income will see an increase of 5.6 percent over 1985, the paper said.

Encouraged by local governments, rural industrial businesses have also sprung up in the area over the past few years with output value up five times over 1982.

/9716
CSO: 4020/36

GANSU

READJUSTMENT OF AGRICULTURAL OUTPUT ADVOCATED

Beijing NONGMIN RIBAO in Chinese 9 Apr 86 p 2

[Article by Jia Zhijie [6328 1807 2638], deputy secretary, Gansu CCP Committee: "Readjust the Mix of Rural Output; Straighten Out Internal Economic Relationships"]

[Text] Gansu had a good harvest last year even though some of the prefectures in our province suffered severe natural disasters. Gross agricultural output value reached 4.19 billion yuan, an increase of 8.1 percent over the previous year, and per capita net income increased 36 yuan.

Nevertheless, Gansu's rural per capita net income is the lowest in the nation, as is her per capita supply of grain, and she is the most impoverished in terms of insufficient clothing and food. So as we continue to implement the second step of our reforms this year, we must conscientiously carry out the spirit of Central Committee Document No 1, further readjust the mix of rural output and straighten out internal economic relationships.

I. We Must Correctly Handle the Relationships between Grass and Tree Planting, Diversified Farm Operations and Grain Production, Continue Planting Grass and Trees, Never Slacken Grain Production and Vigorously Diversify Farm Operations.

Grass and tree planting and the growth of animal husbandry comprise a strategic direction for Gansu's agricultural development and a focal point in the readjustment of output mix. The questions of how to ensure that grass and tree planting continue and how to coordinate grass and tree planting, growth in grain production and diversification of farm operations are matters that we must conscientiously resolve through practice. Our stress on increasing grain output by no means implies slackening in grass and tree planting. But on cultivated land we must first maintain the grain sown area, and we can appropriately decelerate withdrawal of land from cultivation. For the most part, grass and tree planting should be conducted on the "three wastelands," and we should increase rotation on grasslands.

In view of conditions in Gansu, we should establish targets and raise demands by region in our effort to increase grain output. For example, in the area east of the Yellow River, which is one of commodity grain production bases of

the Northwest, and in the small concentrated grain production districts lying to the south and east of the Long River, we must vigorously diversify farm production and implement policies stimulating grain production so that these areas provide more commodity grain. Many areas south of the Yellow River have increased grain output and achieved grain self-sufficiency step by step by improving farm fields, changing cropping systems and increasing material inputs. But in areas that really lack the proper conditions for grain self-sufficiency--such as those having alpine, overcast and damp climates, or arid mountains, forests, or grazing or semi-agricultural, semi-grazing areas--we must plant grass and trees, develop animal husbandry, diversify farm production, resolve the grain problem by increasing economic income and not force these areas to be totally self-sufficient in grain.

II. We Must Correctly Handle the Relationship between Grass Growing and Animal Husbandry and Promote a New Breakthrough in Animal Husbandry.

In the past several years, Gansu has been able to plant grass on 14-plus million mu because the province has conscientiously carried out the strategic program proposed by Comrade Hu Yaobang to plant grass and trees and to develop animal husbandry. But if we only demand grass planting and ignore animal raising, we will obtain only ecological benefits, which are indirect, and no economic benefits, which are direct, and the enthusiasm of the masses for grass planting cannot be sustained. We should adopt various effective measures to accelerate development of animal husbandry, such as the planned establishment of stud farms or having the state or collective provide credit sales or loans to peasants who have grass but cannot afford to buy sheep. In developing herbivorous animal and poultry raising, we must attach special importance to chickens, rabbits, bees and the like, which require little investment and yield rapid results. While helping millions of peasants develop the animal raising industry, we must concentrate our forces on the establishment of commercial animal husbandry bases. In developing this industry we must stress grass growing and animal raising and processing and marketing.

Meanwhile, we must also engage in multilevel value-added production, use sales to stimulate increased raising and raising to spur increased grass planting, and we must integrate planting, raising and processing. We must also vigorously promote the "three integrations"--namely, of grass planting, feed processing and animal breeding; of grazing, agricultural and suburban areas; and of breeding in grazing areas, fattening in agricultural areas and marketing in urban areas--so as to make the output mix more rational, accelerate turnover and increase production and income.

III. We Must Correctly Handle the Relationship between "without Agriculture There Will Be Instability" and "without Industry There Will Be No Enrichment," Keep Agriculture the Basis, Make Town and Township Enterprises the Salient and Promote Across-the-Board Development of the Rural Economy.

The backwardness of Gansu's rural economy is apparent in the backwardness of her agriculture but is most prominently manifested in the backwardness of her town and township enterprises. Last year we stressed town and township

enterprises as a salient, directly increased income by establishing township enterprises and, more importantly, gave momentum to the entire rural economy.

This year town and township enterprises throughout the province must stress growth, speed and improvement and pay attention to the resolution of two kinds of problems--strengthening management and striving to improve economic results, and being very sure to maintain the enthusiasm of town and township enterprises. In correcting unhealthy practices, we must proceed from actual conditions, seek truth from facts and delineate policy boundaries. We must correct unhealthy practices, preserve the enthusiasm of the masses for running enterprises and promote even faster development among town and township enterprises.

IV. We Must Correctly Handle the Relationship between Current Production and Improving Basic Agricultural Conditions, Increase Investment and Ensure Continued and Stable Growth in Agriculture.

The rapid growth in the rural economy over the past several years was due to the decisive effects of the household production responsibility system and to the sudden release of productive potential accumulated through many years of capital construction and technological transformation in agriculture. The future trend in agriculture will be toward continued stable growth, and this growth will depend largely on steady improvement in agricultural productive conditions. Yet China's material and technological base is very fragile, state and collective inputs have declined in relative terms and agricultural production lacks sufficient logistical strength. In the last several years, policy has been good, Mother Nature has helped out, so agriculture has reaped successive bumper crops. All of this has concealed weaknesses in the agricultural base and led to a relaxation in capital construction of farm fields, resulting in serious aging of some hydraulic systems, failure to repair damage to these systems and reduction in irrigated area, and enthusiasm for construction of the "three fields" has declined in some arid mountainous regions. Gansu must stress current agricultural production and progressively increase agricultural inputs, but the province must strive to improve basic agricultural conditions as well. The funds the province needs to increase inputs should be raised from a variety of sources. In addition to annual increases in state investment, localities throughout the province must raise a corresponding amount of new funds, and during this year and next we must strive to achieve a ratio of 40 percent [vague, as published]. Cooperative economic organizations throughout the province must deduct accumulation and depreciation for fixed capital from their annual revenues, establish agricultural development funds and improve labor input systems. Areas in which town and township enterprises are well developed should continue to use industry to supplement agriculture. If we do these things for a number of years we are bound to achieve success.

12431
CSO: 4007/387

GANSU

BRIEFS

SUMMER HARVEST--Beijing 11 Sep (XINHUA)--Farmers in Gansu Province in north-west China harvested 3.78 million tons of summer grain this year, 150,000 tons more than in 1985, an official of the local statistical bureau said.
[Text] [Beijing XINHUA in English 0755 GMT 11 Sep 86 OW]

/9716
CSO: 4020/36

GUANGDONG

GUANGDONG HOLDS WATER CONSERVATION CONFERENCE

HK270528 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 25 Sep 86

[Excerpts] The four day provincial conference on water conservation and hydropower work concluded in Zhongshen city today.

The conference demanded that all localities mobilize the masses to actively take part in water conservation construction, to increase the ability of water conservation facilities to supply water and resist natural disasters, and to ensure and promote the development of agriculture and national economy.

The conference held that since the founding of the PRC, the province has achieved remarkable results in water conservation and hydropower construction, with some 10 billion yuan spent on constructing water conservation facilities. This has laid a good material foundation for industrial and development in the province. However, water conservation facilities in some areas have been in disrepair for many years and their ability to resist natural disasters has been weakened.

The conference demanded that all localities implement the regulations stipulated by the central and provincial authorities on accumulating rural labor in water conservation construction and increasing water fees, conduct entrepreneurial management of water supply projects, turn water supplying into commodities, raise funds from all sides for water conservation construction, increase investment in water conservation construction, and exercise strict control over water by legal means.

The conference stressed that leaders at all levels must fully understand the importance of water conservation work. At present, they must take prompt action and organize the masses to set off an upsurge of water conservation construction this winter and next spring.

/12913
CSO: 4007/46

GUANGDONG

BRIEFS

WORK GROUPS TO DROUGHT-HIT AREAS--According to YANGCHENG WANBAO, the provincial government today organized three work groups which will go to drought-affected areas in northern, eastern, and western parts of Guangdong to help to solve problems in fighting drought. The autumn drought in the province has had a serious effect on the late crop. According to 26 September statistics from the provincial antidisaster command, the area of crops affected by drought has reached 11.26 million mu. At present 2.9 million peasants are working hard to fight drought and strive for a bumper harvest. This autumn, typhoon no. 16 brought heavy rainfall to Zhanjiang and Hainan, but other parts of the province have had very little rain. Precipitation has been about 30 percent below normal. Huiyang, Meixian, Shaoguan, Maoming, and Zhaoqing prefectures and cities are seriously affected by drought. [Text] [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 28 Sep 86 HK] /12913

CSO: 4007/46

GUIZHOU

PRC STUDIES WATER LOSS FROM KARST FORMATIONS

OW081124 Beijing XINHUA in English 0707 GMT 8 Nov 86

[Text] Guiyang, 8 November (XINHUA)--Chinese scientists will join efforts to solve water loss problems on lime-stone based farmland at China's first karst research center in south China's Guizhou Province.

According to a provincial official, scientists are being invited to assist with this problem in the province, which is severely affected by karst formations.

Karst, an irregular layer of limestone, contains sinks, underground caverns and streams, and can cause water loss and drainage problems for farmers.

Over 70 percent of the cultivated land in Guizhou Province is covered by karst, ranking first in the country. Its 30 million people have always suffered from water shortages both for drinking and irrigation.

Karst experts from China's major cities of Beijing, Shanghai, Nanjing, and Chengdu will concentrate their efforts on comprehensive control of karst and water leakage in the southern part of Puding County, the most serious sufferer in the province and the site of the research center.

"This type of research project has never been attempted by scientists in this country or anywhere in the world," the official said.

In addition to the invited scientists, other experts from all parts of the country are encouraged to come to the region. The province will offer materials on the region's geology, the general configuration of the earth's surface, hydrogeological data and local research results.

The local government started a research program on karst distribution, growth patterns and utilization in 1976. About 60 scientists attending a national meeting approved the program last May, and highly praised local efforts to control karst.

A number of water-supply projects such as power stations and reservoirs have been built in the hope of yielding social and economic results.

/12232
CSO: 4020/45

GUIZHOU

BRIEFS

GOOD RESULTS IN ASSISTING POOR--This year the province has achieved good results in assisting the poor. By reducing the peasants' burden, increasing investment in production, and upgrading the scientific and technological level of the masses, all localities have speeded up the work of assisting poor areas to overcome poverty and become rich. According to statistics of 24 poor countries, some 130 million yuan have been invested this year in production and construction projects to assist over 90,000 peasant households in developing farming and breeding. Assistance was mainly given to 100 industrial projects, and the province's output value has been increased by 120 million yuan. The province has thus achieved a net profit of 23 million yuan. To upgrade the scientific and technological level of poor areas, this year the province has also dispatched over 3,000 scientific and technological personnel to remote mountain areas where they trained local qualified personnel and published over 20 kinds of scientific and technological books including farming, breeding, mining, and the processing of agricultural and sideline products. Some poor households have thus acquired scientific and technological knowledge and become rich through labor. [Text] [Guiyang Guizhou Provincial Service in Mandarin 2300 GMT 20 Oct 86 HK]

/9716
CSO: 4007/56

HEILONGJIANG

LARGE FARMING CENTER BUILT IN HEILONGJIANG

OW221433 Beijing XINHUA in English 1208 GMT 22 Oct 86

[Text] Beijing, October 22 (XINHUA)--China's largest mechanized farming center, composed of 100 state farms, has been built on a plain in Heilongjiang Province over the past 40 years, the "Economic Daily" reported today.

The center on the Heilong-Songhua-Lengjiang river plain now boasts 140 towns, each with more than 3,000 residents; 3,000 villages; six colleges; 24 secondary vocational schools; and 2,300 middle and elementary schools. Among 36,000 technicians working there, 6,160 have middle and senior academic titles.

Since 1947, when demobilized soldiers began reclamation there, the agricultural and livestock farms, which cultivate two million hectares of farmland, have produced 49.5 million tons of grain and soybean, in addition to a great quantity of animal by-products. They have handed over a total of 1.7 billion yuan (460 million U.S. dollars) in taxes and profits to the state.

The farms have increased their degree of mechanization since 1978, when advanced machines, including seed and grain processing equipment, and water-conservancy facilities, began to be imported from the United States, the Federal Republic of Germany and Japan. In field management, the mechanization rate has now topped 90 percent.

Workers at the Honghe farm, one of three built with foreign funds, have the highest work efficiency in China. Each worker ploughs an average of 134.5 hectares.

Now the center is undertaking a 200,000-hectare land reclamation scheme which began in 1983 with loans from the World Bank. About 60 percent of river dikes, roads and power projects have been completed.

/9716
CSO: 4020/33

HEILONGJIANG

BRIEFS

SPECIALIZED HOUSEHOLDS DECLINE--At the end of 1985, more than 156,000 households in the province specialized in raising livestock. Based on a survey by the provincial animal husbandry bureau, in the first half of the year the number of households specializing in raising livestock declined by 43,684 over last year, or 27.9 percent. The major reasons for the decline include poor management, insufficient funds, and lack of support from concerned departments. Some households have noted that it is difficult to buy materials, difficult to borrow money, and difficult to sell their products. [Excerpts] [Harbin HEILONGJIANG RIBAO in Chinese 10 Oct 86 p 1] /12232

VEGETABLE HARVEST--Based on statistics, 10 major cities have sown 370,000 mu to cabbage, radishes, onions and other autumn crops (Not including potatoes), it is estimated that the volume of goods will be 650 million kilograms, an increase of 35 percent over last year. This year the estimated gross output of potatoes in the eight major producing counties is 997,000 tons, a 19.1 percent increase over the same period last year. [Excerpts] [Harbin HEILONGJIANG RIBAO in Chinese 5 Oct 86 p 1] /12232

POLICY PROMOTES CATTLE RAISING--Harbin, October 21 (XINHUA)--Heilongjiang Province, in northeast China, ranks first in the country in raising jersey cattle, a provincial agricultural official said today. The province has 288,000 head this year--double the figure in 1982. The province attributed this to the flexible policy adopted by the local government and improved services in the last four years. Apart from collective farms, individuals are also encouraged to raise cattle. Now, households with over eight head of cattle each number 1,500, two times the 1984 figure. The local authorities have also raised milk prices and allowed the peasants to barter milk for fodder. Meanwhile, the local government has set up an improved service network including fodder processing, milk purchasing and processing, and veterinary services. The province has invested 30 million yuan (about eight million U.S. dollars) in building a modern stock-breeding station which supplies frozen cattle sperm to a dozen other provinces. [Text] [Beijing XINHUA in English 0856 GMT 21 Oct 86 OW]

/9716
CSO: 4020/33

HUBEI

BRIEFS

EMERGENCY MEASURES TO PREVENT FIRE--Wuhan, 15 November (XINHUA)--South China's Hubei Province has taken three emergency measures to prevent further loss due to forest fires which have already caused heavy losses, according to a local official. The measures include stepping up forest fire-control education among local leaders and residents, a complete fire-control network and punishing those who are found responsible for fires. During the 7 months from November 1985 to May 1986, 1,054 fires broke out in the province. They burned 10 million trees on 23,400 hectares of land. Seventy-three fires were classified as major. The number of fires was 3.4 times higher than the average figure for the previous 5 years, the official said. The local government attributed the fires to care-less forestry protection and poor fire preventive measures. [Text] [Beijing XINHUA in English 1035 GMT 15 Nov 86 OW] /12232

CSO: 4020/45

JIANGSU

CIRCULAR ON DROUGHT ISSUED BY PROVINCE

OW250731 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 23 Oct 86

[Text] The Jiangsu Provincial People's Government issued a circular on 21 October calling on all localities to take measures against the drought and for successful autumn sowing.

The circular says: Drought has affected our province consistently since August because there has been little rainfall. In spite of the fact that drought has eased up to some extent in the area north of the Huai He, it is spreading south of the river and in the hilly areas, seriously affecting autumn sowing and seeding emergence. In many areas, the drought has caused the seedlings to either wither after sprouting or sprouting unevenly.

In view of this, the provincial government calls on all localities to concentrate forces and strengthen leadership over autumn sowing at this juncture, which is crucial to sowing. Leaders at all levels in the areas of serious drought should work on the frontline to combat drought, studying and implementing the measures needed to deal with the drought. Departments in charge of agriculture should step up technical guidance, vigorously popularize wheat varieties that require little or no plowing, and make sure furrows in the fields are opened well so they can cope with the weather, whether it rains or not. Industrial enterprises in areas seriously affected by drought should yield their electricity supply. All localities should step up shipment of oil to combat the drought. Hilly areas should make active efforts to pump up water. Areas along the Chang Jiang should channel water into the fields in good time to make sure there is enough water to cope with the drought.

/9716
CSO: 4007/56

LIAONING

FARMERS IN NORTHEAST PLANT MORE FRUIT TREES

OW071220 Beijing XINHUA in English 0754 GMT 7 Nov 86

[Text] Zhenyang, 7 November (XINHUA)--Farmers in northeast China's Liaoning Province have discovered that planting fruit trees is a surefire way to get rich, according to a local agricultural official.

They planted more than 58 million fruit trees this year in this province which has a population of 36 million, the official told XINHUA today.

The target of the provincial government is to expand the 1 million tons of fruit output this year to 2.1 million tons by 1990.

The emergence of the fruit growing rush was largely attributed to the price reform conducted since 1984.

As a major fruit producer in China, Liaoning province supplies 30 percent of the country's apples.

Before 1984, prices of major fruits like apples, pears, peaches were decided by the government. Growers were allowed to sell only the remaining part of their harvest above the quota set by commercial departments. And fruit prices usually fell behind its productive costs.

Now the prices of fruits produced by collective and individual peasants are allowed to float with market conditions, which used to be agreed between the seller and purchaser.

In the past 3 years prices have doubled for major fruits in Liaoning. However, fruit consumption is still steadily rising 10 percent annually, the official said.

He said both rural and urban residents are able to eat more fruit with increased income.

Under the responsibility system, farmers take good care of the fruit trees, which are owned by the collective, and give the state a settled amount of money from selling the fruits at the end of each harvest.

More farmers are willing to sign contracts with local authorities for growing fruits, for they found they can make bigger profits out of selling fruits than selling grain.

Now the provincial government has decided to prolong the original 10-year contract with the fruit growers.

It also allowed farmers to own and sell fruit trees they planted on barren lands as another sign of encouragement.

As a result, farmers greened barren hills and also decorated their courtyards with fruit trees.

Eager to improve their skills of fruit growing, they also flocked to lectures and training classes which were held in the more than 30 fruit-producing counties in the province's south and west. There are nearly 20,000 fruit technicians, the official said.

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CSO: 4020/45

NEI MONGGOL

HOUSEHOLD PASTURELAND SAID FLOURISHING

OW071106 Beijing XINHUA in English 0652 GMT 7 Nov 86

[Text] Hohhot, 7 November (XINHUA)--Household pastureland is flourishing on the Hulun Buir grasslands in North China's Inner Mongolia Autonomous Region.

Now the grasslands boast more than 1,000 household grazing lands, involving about one-third of the total herdsmen, said a regional official.

"They bring new hope to the modernization program of Chinese prairies," he said.

Hulun Buir grasslands, the third largest natural fine pasturelands in the world and the birthplace of nomadic tribes in north China, now has about 10 million hectares of grasslands, accounting for 12.5 percent of the total in Inner Mongolia.

Before 1982, herdsmen here kept following the traditional backward nomadic way, local officials said, adding, "it is the reform initiated by Chinese top leader Deng Xiaoping that enlivens the grasslands which had sealed itself off for years."

The first household pastureland was set up jointly by Zhundi and Dawa in 1982 when reform in the pastoral area began. Their pastureland, covering an area of 933 hectares, had only two tractors and less than 50,000 yuan (13,500 U.S. dollars) in property.

To get rid of the onerous manual labor, Zhundi and Dawa, who had machine maintenance technical know-how, borrowed money from the local government to buy tools and machine parts.

They built two cattle sheds and fences which covered an area of 260 square meters and set up permanent houses, quitting the nomadic way.

After several years of efforts, the size of the pastureland became bigger and bigger. Now Zhundi and Dawa have two combines, nine tractors of different types and 20 other tools for herding.

They also planted more than 10,000 trees around a fodder production base covering 260 hectares, and grew 133 hectares of oats and some other herbage and fodder.

The pastureland owners said they now have more than 200 cattle and dairy cows, 460 sheep and 30 horses. "We can sell more than 320 kilograms of commodity milk every day," they said.

"We have 350,000 yuan (88,500 U.S. dollars) in fixed assets, and our annual per capita income is as high as 3,000 yuan (710 U.S. dollars)," they added.

Now the household pasturelands on the Hulun Buir grasslands are mainly engaged in raising cows, and their annual per capita income is above 1,000 yuan (270 U.S. dollars), according to local officials.

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CSO: 4020/45

NEI MONGGOL

BRIEFS

WOOL PROCUREMENT--Nei Monggol Autonomous Region has prefulfilled its wool procurement plan by 3 months. The volume of procured sheep wool is equal to the figure of the corresponding 1985 period, and that of cashmere showed a 3.3 percent increase over the figure for the corresponding 1985 period. According to statistics, by the end of 1986 the total volume of procured sheep wool is expected to reach more than 43,700 tons, and that of cashmere 1,450 tons. All this may saturate the demand of the wool textile enterprises throughout the region. [Excerpts] [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 12 Oct 86 SK] /12232

CSO: 4007/62

QINGHAI

BRIEFS

WATER CONSERVANCY EXPENDITURES Water resources departments of our province have drawn up specific and detailed plans for building and improving 104 water conservancy projects during the winter and coming spring with an allocation of 5.5 million yuan. The money will be mainly used to repair some damaged projects, build a conveyance system, and improve irrigation canals. With the completion of these projects, 180,000 mu of farmland will be irrigated and there will be an increase of 11,450 kilowatts of electricity generated by small hydropower stations in farming and pastoral areas. [Text] [Xining Qinghai Provincial Service in Mandarin 2330 GMT 23 Oct 86 HK] /12232

CATTLE, SHEEP PROCUREMENT--By 2 October, Qinghai Province had procured some 430,180 head of cattle and sheep and 6,539 tons of beef and mutton had been supplied to the province. The amount of beef and mutton supplied to the province in this period was 21.05 percent more than in the same period last year. [Summary] [Xining Qinghai Provincial Service in Mandarin 2330 GMT 27 Oct 86 HK] /12232

CSO: 4007/62

SHAANXI

RURAL ADVANCEMENT IN SCIENCE, TECHNOLOGY PLANNED

HK080911 Xian Shaanxi Provincial Service in Mandarin 0030 GMT 4 Oct 86

[Excerpts] In order to swiftly develop rural productive forces and speed up economic development in the province's rural areas, the provincial party committee and government recently formulated a plan for promoting scientific and technological advancement in the rural areas during the 7th 5-Year Plan period. The basic guiding thinking of the plan is to send science and technology to the rural areas through organized work so as to promote the move of science and technology from urban to rural areas and from advanced to backward areas; to turn science and technology into a productive force as quickly as possible; and to use advanced science and technology to transform agriculture, arm township enterprises, and speed up the process of upgrading the rural productive forces.

The plan points out that to bring about scientific and technological advancement in the rural areas, it is necessary to put agriculture in an important strategic position and to vigorously develop diversified economy and township enterprises on the basis of ensuring a steady growth in grain production, so as to promote further readjustment of the rural production structure.

The plan demands that the province develop science and technology centering on the general target of quadrupling its total industrial and agricultural output value; catch up with, equal, and surpass by 1990 the national average level in the per unit yield and quality in crops, livestock, and poultry products; increase the proportion of its forest area from 22.2 to over 27 percent; increase the current ratio between agricultural output value and industrial sideline production output value in the rural areas from 1:1 to 1:5; basically change the situation of rural areas producing elementary products; upgrade the province's agricultural science and technology level to the nation's average or advanced level; and strive to catch up with the advanced level of economically developed areas. In agriculture, on the basis of self-sufficiency in grain, the province must attain the target of being self-supporting in edible oil in 3 years, and the target of annual grain output of 22 billion jin and annual oil crop output of 7.5 million dan by the end of the 7th 5-Year Plan. In animal husbandry, the proportion of the output value of animal husbandry in the total agricultural output value should reach 17 percent, and efforts should be made to gradually catch up with the national

level. In forestry, the province's annual timber output must be increased from 500,000 cubic meters to 800,000 cubic meters. The province's annual forestry output value must be increased from 680 million yuan to 1.1 billion yuan. The annual output value of the province's township enterprises should reach 10 billion yuan.

The plan also put forth specific requirements in the area of developing and promoting technological projects, organizing people to send science and technology to the rural areas, and upgrading peasants' intellectual level and labor quality.

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CSO: 4007/49

JPRS-CAG-86-040
10 December 1986

SHAANXI

BRIEFS

BUMPER COTTON HARVEST--Despite the autumn drought bringing difficulties to the work of grain growing and autumn sowing, the province reaped a bumper cotton harvest this year. The average amount of cotton ginned per unit area from the 24 counties' and cities' 730,000 mu of cotton fields was more than 40 kilograms, reaching an all time high. Compared to recent years, this year the province has reaped its best cotton harvest and produced the best quality cotton.
[Summary] [Xian Shaanxi Provincial Service in Mandarin 0030 GMT 20 Oct 86 HK]
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CSO: 4007/62

SHANGHAI

BRIEFS

FUNDS TO AID GRAIN PRODUCTION--Shanghai, October 26 (XINHUA)--Shanghai, China's leading industrial center, has allocated a special sum of 125 million yuan (33.7 million U.S. dollars) to boost grain production between 1986 and 1990, according to the municipal agricultural department. This is the largest sum of funds the city has earmarked for grain production in the past 37 years, a bureau official said. Shanghai has ten suburban counties inhabited by 5.1 million people, with 360,000 hectares of cultivated land. These funds will be used to help upgrade water conservation facilities, purchase farm machines, set up stock seed breeding bases, aid villages and households specializing in seed-breeding and transform waterlogged lowland. So far, 25 million yuan (6.7 million U.S. dollars) has been distributed to 79 major grain-growing townships and 33 seed-breeding farms. According to the official, a 200-kilometer underground aqueduct will be dug and waterlogged lowland transformed in the coming winter and spring. [Text] [Beijing XINHUA in English 0736 GMT 26 Oct 86 OW]

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CSO: 4020/36

SHANXI

AGRICULTURAL DEVELOPMENT STRATEGY FORMULATED

HK260727 Taiyuan Shanxi Provincial Service in Mandarin 2300 GMT 19 Oct 86

[Excerpts] A solution is now found to solve the long-standing problem of how to develop the province's agriculture development. The provincial agricultural planning commission, assisted by the experts concerned, has drafted the province's overall agricultural plan after over 1 year's work. The plan spells out a way of rationally readjusting the province's rural industrial structure, as well as giving specific guidance of macroscopic administration over agriculture.

Such a soft scientific study as the province's agricultural overall planning was started in May 1984 in order to develop the province's agriculture. It was completed in June 1985. In connection with the actual conditions, the planning department repeatedly revised its plans, which were formulated after discussing the province's nine different strategic plans on agricultural development. The department inputed the nine plans into the computer, and analyzed year by year the projected results of the plans by the year 2017 in terms of economic results, social benefits and ecological results. Through the analysis, it selected the best one.

The present plan is the best strategic one which conforms to the province's development of building energy, heavy industry and chemical industry bases. The strategic principle of the plan in developing agriculture is to greatly develop rural industries and sideline production on a household basis; to continue to strengthen the development of farming industry and forestry; and to promote the development of animal husbandry.

The investment proportion in the province's agriculture, forestry, animal husbandry, as well as industry and sideline production industry projected by the principle should be respectively 30, 25, 10 and 35 percent of the province's gross annual investment sum. Thus, the province has found a solution for the development direction of agriculture. The overall plan also preliminarily discussed the issue of exercising macroscopic administration over agriculture, and worked out the maximum and minimum limits of the administration.

The overall plan was formulated on the basis of a simplified overall agricultural planning study; and by using the method of systems engineering, the dialectical method, the theory of open systems, and mathematics modules and computers.

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CSO: 4007/56

SHANXI

WATER CONSERVANCY CONFERENCE

HK222103 Taiyuan Shanxi Provincial Service in Mandarin 2300 GMT 16 Oct 86

[Excerpts] Yesterday [16 October] evening, the provincial government held a telephone conference on mobilizing the rural areas throughout the province to engage in water conservancy construction. Vice Governor Guo Yuhuai spoke. Responsible comrades of Yuncheng and Luliang administrative commissioner's offices and the southern suburbs of Taiyuan City respectively introduced their experiences.

Guo Yuhuai pointed out: Our province now has two problems in water conservancy construction:

1. Lack of water has become more and more serious. The amount of water needed has now reached 1 billion tons. This has become a very big factor in restricting our province's economic development.
2. Water conservancy facilities have become old and are seriously out of repair.

In view of this, the provincial party committee and provincial government have studied and decided that this winter and next spring, we must further strengthen organization and leadership and extensively mobilize the masses to whip up an upsurge in large-scale water conservancy construction within our province. Our general task is to complete the specific arrangements made by the Provincial Water Conservancy Department for water conservancy construction this winter and next spring, that is, repairing 20,000 water conservancy facilities and 10,000 sets of mechanical and electrical equipment, restoring irrigated areas of 300,000 mu, and levelling paddy fields of 4 million mu.

The conference made detailed arrangements for this main task and demanded that governments at all levels seriously study specific measures and work hard to implement the spirit of this conference and completely carry out the tasks of water conservancy construction.

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CSO: 4007/49

SICHUAN

PLASTIC-COVER RICE SEEDLING CULTIVATION DESCRIBED, PRAISED

Beijing NONGMIN RIBAO in Chinese 7 Apr 86 p 2

[Article by Li Yujia [2621 0060 0857], Crop Institute, Sichuan Academy of Agricultural Sciences: "The Technique of Using Plastic-Sheet Covers in Seedling Cultivation Proves Very Effective in Increasing Rice Output"]

[Text] In recent years the new technique of using plastic-sheet covers in seedling cultivation has been tested, demonstrated and disseminated throughout Sichuan, proved extraordinarily effective in raising rice output and, as of 1985, been applied on an area of more than 10 million mu. Results indicate that the technique is just as effective as hothouses in ensuring timely sowing, preventing seed and seedling rot, yielding sturdy sprouts and accelerating heading. And the technique has also proved to reduce energy consumption and costs and to be simple, convenient, suitable for individual household farming and thus very popular among peasants.

The most effective and widely used plastic-cover rice-seedling cultivation approaches in Sichuan are the wet and dry techniques. The former is good for growing small early rice and middle-season rice seedlings, medium seedlings of early and middle-season rice that are planted directly, small middle-season rice seedlings that are planted in two stages and large sprouts that are planted once. The dry cultivation technique is suitable for growing small sprouts that are planted directly or in two stages. Small and medium sprouts grown under plastic covers can be planted in winter paddies or in green-manure fields or as early-ripening small spring crops. Multitilling seedlings so grown can be planted as late-ripening small spring crops or in deep winter paddies, cold-soaked sodden fields, fields holding stored water, open fields and other fields that are planted late.

Wet beds should be placed in green-manure or shallow winter paddies that are of medium fertility and shielded from wind, have convenient water supply and few weeds and face sunlight. Each row should be made 4 to 4.5 chi wide and each furrow about 1 chi wide. Dry beds should be located in fertile loam fields that face sunlight, are shielded from wind and have convenient water supply. These beds should be finely raked and leveled. Each row should be 4 to 4.5 chi wide, and around each row a 1- to 2-cun bank should be built up, forming a shallow pit of sorts. The length of the bed should be determined by

the amount of seeds to be planted, and the banks should be tamped tightly and solidly and evened off in height so as to facilitate placement of the plastic covers.

Seeds should be cleaned and disinfected so as to improve germination, and sowing should begin as soon as the average daily outside temperature stabilizes at 10° C or above. That is, in the flat hills of the northeastern part of the basin, the sowing period should be from 20 Mar to 5 Apr; in the hills of the central part of the basin, from 15 to 30 Mar; in the hills of the eastern part of the basin, 5 to 25 Mar; and in the mountains around the basin, 25 Mar to 15 April.

For each mu (net area) of wet beds, 500-600 jin of seeds (that is, about 8 qian to 1 liang per square chi) should be sown; for each mu of dry beds, 400 jin (about 7 qian per square chi); for each mu of medium seedlings, 100-150 jin (about 1.7-2.5 qian per square chi); and normally for each mu of large seedlings, 15-20 jin (about 0.3-0.4 qian per square chi). Once the seeds are sown, low arched frames should be erected so that the apex of the frame arch stands 5 to 6 cun above the row surface, and bamboo sticks should be spaced every 1.5 to 2 chi. Plastic sheet covers should be placed on top of the frames and tightly sealed to the ground with mud so as to keep the heat in and prevent the covers from being blown away by strong winds. To stimulate growth, the covers should be kept sealed and warmth maintained until all seedlings sprout and turn green. Once the seedlings have sprouted, temperature inside the covers should be carefully observed. On sunny days, when interior temperatures rise above 32° C, the covers should be promptly removed. The timing of transplantation should be set according to leaf age. Small sprouts that are to be planted in two stages should be transplanted no later than the age of 1.5 leaves; directly planted small sprouts, 1.5 to 2 leaves; medium seedlings, 3.5-5 leaves; and large seedlings, 7-8 leaves. To improve survival rates, sprouts should be transplanted with mud still attached to their roots, and their fields should be flooded with a shallow amount of water.

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CSO: 4007/387

SICHUAN

BRIEFS

AGRICULTURAL SOCIETIES THRIVE--Chengdu, October 22 (XINHUA)--Agricultural technology societies have long been regarded as the school to help peasants become more affluent. Nearly 10,000 such societies have been set up, according to an official of the Sichuan Provincial Association for Science and Technology. With a total membership of 260,000, 80 percent are from peasant households specializing in farming, animal husbandry and fisheries. China's rural economic reform encouraged peasants to increase commodity production. As a result, peasants were more eager to learn new ways of gaining marketing information. "It's the agricultural technology society that are capable of teaching peasants," said Lin Lin, deputy president of Sichuan Academy of Social Sciences. The societies were organized by two or more peasant households who specialized in various fields and who agreed to pool their funds. Thanks to the establishment of such societies, Lin said, science and technology are spreading very fast in the countryside. For example, in the town of Xinqiao in Dazhu County, a research institute for raising pigs offered lectures to its members on how to fatten pigs faster. After the course they sold 40 percent more pigs the following year and the income of peasants in the town increased by 160,000 yuan. [Text] [Beijing XINHUA in English 0211 GMT 22 Oct 86 OW]

/9716
CSO: 4020/33

TIANJIN

BRIEFS

GRAIN OUTPUT--According to initial estimates, this year the gross grain output of Tianjin Municipality will reach 1.475 billion kg, 70 million kg more than that of 1985; and the per-unit yield will reach 215 kg, 5 kg more than the 1985 figure. Both figures will be record highs. [Summary] [Tianjin TIANJIN RIBAO in Chinese 26 Sep 86 p 1 SK] /12232

CSO: 4007/62

XINJIANG

BRIEFS

GOODS DISTRIBUTED THROUGHOUT PRC--Beijing, 7 November (XINHUA)--The multi-national Xinjiang Uygur Autonomous Region has plans to distribute surplus grain to other provinces this year after eliminating the need for state grain subsidies. The announcement was made at a Xinjiang regional economic and social development strategy discussion which opened here Thursday. Xinjiang, a region now self-sufficient in grain, received financial aid of 17.4 billion yuan (4.7 billion U.S. dollars) and another 13.1 billion yuan (3.5 billion U.S. dollars) in capital construction from the state between 1950 and 1985. Between 1972 and 1983, it received 1,750 million kilograms of grain from the state. The region reached self-sufficiency level in 1984, and because of this year's good harvest, it plans to provide 500 million kilograms to other provinces.
[Text] [Beijing XINHUA in English 0926 GMT 7 Nov 86 OW] /12232

MARKET THRIVES--The amount of commodities purchased by the commercial and the supply and marketing systems of Xinjiang Region from January to September this year were 4.1 percent and 3.11 percent more than in the same period last year, and the amount of commodities sold were 5.4 percent and 24.55 percent more than in the corresponding period last year. The region fulfilled 67 percent of the quota for grain ordered by contract. The amount of exports was up 20.7 percent. The amount of revenue by the end of September was 740 million yuan, which accounts for 80.5 percent of the annual quota. Calculated on the basis of comparable items, the amount of revenue recorded an increase of 9.8 percent over the same period last year. The amount of money put into circulation was some 24 million yuan less than in the same period last year. [Summary] [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 21 Oct 86 HK] /12232

CSO: 4007/62

XIZANG

GRAPE-GROWING INTRODUCED TO XIZANG REGION

OW210416 Beijing XINHUA in English 0237 GMT 21 Oct 86

[Text] Beijing, October 21 (XINHUA)--The Tibetan people living on the "roof of the world", can now eat fresh grapes grown in the autonomous region for the first time in history.

Du Bingjun, director of the Tibetan Science and Technology Information Service Institute, got the idea of growing grapes in greenhouses on the frigid Tibetan plateau.

"So I introduced 2,000 grape seedlings from Heilongjiang Province, northeast China, to the more than 3,600-meter altitude of Lhasa, capital of Tibet," Du said.

In July last year bunches of purple grapes ripened. "This summer, the grapes were so large that four or five would weigh as much as 100 grams. The sugar content is next only to that of grapes produced in the Xinjiang Uygur autonomous region, the center of China's grape-growing industry," he added.

The Tibetan people are still more gratified with being able to eat zanba.

Zanba, a roasted barley flour, is the staple food of the Tibetan people, but due to the energy shortage in the region, many people have difficulties in roasting it.

At a nationwide exhibition of science and technology in 1984, the institute found that the people of the Inner Mongolian autonomous region, who love to eat roasted rice, displayed a rice-roaster. So they asked the Mongolians to develop a zanba-roaster and it was a success.

According to Du, a production line to turn out zanba-roasters will go to operation next year.

Moreover, in energy-short Tibet, there are no baked bricks, so cement blocks are used instead. Last year, the institute learned that Jiangxi Province in central China had a method of producing bricks by drying them naturally. The technique was imported and now Tibet produces its own bricks without wasting energy and using local materials.

Small hydroelectric generators which can generate 15 kwh of electricity a day, enough to satisfy the daily needs of a household, were imported from Jiangsu Province to help the region utilise its abundant water resources.

China now has more than 3,800 scientific and technical information institutes of various sizes and at different levels throughout the country, employing 68,000 people.

/9716
CSO: 4020/33

ZHEJIANG

SPECIALIZED PEASANTS BOOST CONTRACT FARMING

OW180438 Beijing XINHUA in English 0128 GMT 18 Oct 86

[Text] Hangzhou, October 18 (XINHUA)--Farmer Wang Zhangde of east China's Zhejiang Province produces as much grain from his land as when it used to be farmed by 16 peasants.

Wang and his wife reap 20 tons of grain every year from 1.4 hectares of land which were assigned to them as part of a new program contracting farmland to those peasants with a knack for farming.

Wang, 45, a good hand at farming and former head of the village science group, also supplies 50 pigs to the village every year, and has exceeded grain and pig production quotas contracted with his village three times in the past three years.

Those peasants, who previously worked the same land, have been transferred to factories run by villages and towns.

"In Zhejiang, it is an increasing tendency to contract more and more farmland to peasants who are good at grain cultivation," a local official said.

"They can produce more grain with fewer hands than before, and this has enabled more and more peasants to go and work in rural enterprises," an official from the agriculture bureau of the Shengxian County, where Wang's village is located, reported.

In Zhejiang Province, an average able peasant can produce five tons of grain every year, or subsistence level for 30 people, which is a much higher rate of efficiency, according to Shen Zulun, vice-governor of the province.

"Because many of the peasants who have contracted farmland are experienced in farming know-how, they have the courage to invest a lot in farm machines, tools and soil improvement," the official added.

In 1984, Wu Gende, 49, in another county in Zhejiang, contracted 3.7 hectares of poor quality land for 15 years. He has spent 10,000 yuan (2,700 U.S. dollars) buying farm machinery, tools and materials to improve the soil.

As a result, his family of nine has earned more than 30,000 yuan (8,100 U.S. dollars) by selling 90 tons of grain and other sideline produce in the past three years.

Since 1984, Wu and 5,000 other peasants have contracted 4,600 hectares of farm-land, one-fourth of Yinxian County's grain-producing land, said Weng Lihua, head of the county.

Weng said his county is expected to distribute half of its 20,000 hectares of grain producing land to 10,000 peasants good at grain-growing in the next two years.

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CSO: 4020/33

ZHEJIANG

BRIEFS

HIGH-QUALITY WATER DISCOVERED--Hangzhou, 15 November (XINHUA)--Chinese and Japanese researchers have located a high-quality natural spring in northern Zhejiang Province, a local official said today. Repeated tests on the Jinsha spring, located in Shuikou Township, Changxing County, shows the water contains almost all necessary trace elements. "There are very few harmful elements," he said, adding each liter of the water has sodium levels only between 1.7 and 2.3 milligrams. The discovery has inspired local authorities to develop enterprises to utilize the daily flow of more than 3 million liters.
[Text] [Beijing XINHUA in English 0241 GMT 15 Nov 86 OW] /12232

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